CLEARINGHOUSE

REPORT ON A STUDY OF MEDICAID UTILIZATION OF SERVICES IN A PREPAID GROUP PRACTICE HEALTH PLAN

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Report on a Study of
Medicaid Utilization of Services in a
Prepaid Group Practice Health Plan

by Norman A. Fuller, Ph.D., M.P.H.
and Margaret W. Patera, M.S.

ABSTRACT

To provide medical services at lower costs without diminishing either quality or coverage the District of Columbia enrolled 1,000 Medicaid beneficiaries in a prepaid group practice (PGP). The project was evaluated over a three year period (1971-74) with regard to: (1) rates of utilization of medical care before and after enrollment; (2) costs of care per capita as compared with those of the 160,000 beneficiaries in the Medicaid fee-for-service universe; (3) patient satisfaction with the PGP; and (4) comparison of drug prescription by specific drug and therapeutic category, before and after enrollment.

Results indicate: Ambulatory physician encounter rates decreased 15%, drug utilization was down 18%, hospital admissions decreased 30%, and hospital days declined 32% after enrollment.

For the same benefit package annual prepaid per capita costs for the 1,000 Medicaid enrollees for 1972, 1973, 1974 were only $282, $232 and $286 respectively, representing a 37% savings when compared to Medicaid fee-for-service per capita costs of $373, $435 and $465 over the same period.

The instrument used to probe patient satisfaction showed the Study Group was satisfied with the PGP because of better dental care, and better accessibility to medical care. The voluntary dropout rate from PGP was 2.5% only and out-of-plan utilization was low indicating acceptance of the PGP service.

Contributors to this Study

In the three years duration of this study many persons in various capacities participated in its design and/or contributed to its implementation. In the Department of Human Resources, District of Columbia Government, acknowledgement is due to Joseph P. Yeldell, William Washington, M.D., William Whitehurst, Sam Morch, Arnicia Donaldson, MBA, Michael Barthel, Ph.D., Carol Bohannon, B.S., Joan Smith, R.N., and Barbara Humphries.

From the Department of Health, Education and Welfare, Homer Jolley, Ph.D., and Frank Seubold, Ph.D., provided the impetus for the funding, while Elizabeth Kramm, Ph.D., and Otto Reid, Ph.D., as Project Officers, gave technical assistance especially with the survey of patients.

Consultation in the area of questionnaire design was provided by Thomas Bice, Ph.D., and Rashid Bashur, Ph.D., and in statistics by Helen Abbey, Ph.D.. Clifton Gaus, Sc.D. was consulted in the experimental design of the utilization rate study. John Williamson, M.D., Paul Stolley, M.D., and David Rabin, M.D., assisted in the area of quality of care and drug evaluation.

Krista Koziol of Westat Research, Inc., assembled and checked much of the utilization data. Margaret Patera, M.S., responsible for the survey of patients and the writing of Chapter VI of this report. Norman A. Fuller, Ph.D., was the investigator who directed the implementation of the project over three years and wrote most of this report.

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Chapter I

THE RESEARCH PROBLEM

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CHAPTER I

THE RESEARCH PROBLEM

1-1 Introduction

The Medicaid Program (Title XIX of the Social Security Act) has been in operation in the District of Columbia since late 1968. In FY 1971, approximately 118,000 Medicaid beneficiaries received services costing $36 million, which works out to an expenditure of $303 per capita. (See Table 1)* This per capita cost does not include administrative costs of running the program, the costs paid by Medicare for those over 65 years of age, or the cost of health services rendered free of charge by the District of Columbia public health clinics.

These costs appeared high to D.C. Government officials, and costs were expected to rise not only as the number of Medicaid eligibles increased but also as a result of the continued inflation of medical costs. Therefore, with a view to providing medical care to Medicaid eligibles more economically, but without diminishing the quality of services, the District of Columbia Department of Human Resources decided to implement a demonstration project in which a certain number of Medicaid eligibles would be allowed to voluntarily enroll in a prepaid group practice (PGP). Accordingly, a contract effective July 1, 1971, was signed between Group Health Association Inc., of

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* All tables, figures and references are at the end of this report.

Washington, D.C., (a local prepaid group practice health plan (PGP) cooperatively owned by its 80,000 subscriber population) and the Department of Human Resources. The terms of the contract provided for a broad range of health services, on a prepaid capitation basis, for a group of D.C. Title XIX eligibles, not to exceed 1,000 individuals, drawn on a voluntary basis.

The contract for the project included the following provisions:

- That the PGP provide a full range of Title XIX D.C. State Plan health services to 1,000 individuals;
- That a PGP card be substituted for the Medicaid card;
- That a waiver of eligibility redetermination be granted by DHEW (under Section 1115) for the 1,000 individuals for the duration of the project (i.e., three years, contingent upon the continued approval of the project on a year-to-year basis); and
- That dental services be provided by the PGP, although they were not provided by the fee-for-service Medicaid Program at that time.

Simultaneously, the Federal Government, through the Office of Research and Demonstrations, Social and Rehabilitation Services, DHEW, funded a proposal to evaluate the demonstration project described above, and to provide factual data on the target population with regard to the following three parameters:

- Rates of Utilization of Medical Care (Chapter IV)
- The Costs of Medical Care (Chapter V)
- Patient Satisfaction with Prepaid Care (Chapter VI)

This book is a report on the results of the project evaluation.

1-2 Statement of the Problem

The Medicaid population (now approximately 200,000 out of a total population of 750,000 in the District of Columbia) consists of two groups. Two-thirds are categorically indigent; i.e., on welfare. The other one-third are medically indigent. As such, these two groups constitute the lowest socio-economic group in the District of Columbia. Lower income has historically been associated with lesser demand for medical care, but the D.C. Medicaid Program has removed the financial barrier to a large range of health services. Medicaid eligibles enjoy free access to medical care from private practitioners in the city, who are paid on a fee-for-service basis. From the volume of paid claims, it is evident that the Medicaid population is making use of those services. Hospitalization rates are particularly high, nearly 1,000 days per 1,000 persons per year, and hospital bills account for 50 cents of every Medicaid dollar.

Would enrollment in a prepaid group practice reduce the hospitalization rate? And if so, by how much? Would the economies thus effected warrant the large-scale enrollment of Medicaid eligibles in PGPs on a voluntary basis? To answer these questions, 1,000 Medicaid eligibles were voluntarily enrolled in a PGP on an experimental basis.

1-3 Study Objectives

The objectives of this study, therefore, are:

- To compare the rates of utilization of medical care of a Study Group of 1,000 Medicaid eligible volunteers before entrance into the PGP with the rates for the same individuals after their entrance into the PGP;
- To compare the before and after rates of utilization of the Study Group, with the rates for the rest of the Medicaid fee-for-service universe, on an age, sex, and program category adjusted basis; and
- To examine trends in the use of PGP services by the Study Group over consecutive six-month periods of time.

1-4 Statement of Hypothesis

We are given the fact that under either delivery mode, whether fee-for-service or prepaid, the D.C. Medicaid eligible gets services free of charge. There are no deductibles, no co-insurance, no co-payments. Under such conditions the following hypothesis can be stated:

Hypothesis--The rate of utilization of all medical services by the 1,000 individuals in the Study Group in general is dependent on the organizational mode of delivering those services. In this case, the rates of utilization of all services will be higher in the fee-for-service mode than it will be in the prepaid (PGP) mode. In other words, the rates of utilization prior to entrance into the PGP will be higher than the rates after entrance into the PGP.

If the hypothesis is verified, it could show that aggregate utilization of Medicaid health services in the District of Columbia, and consequently costs, could be reduced by substantial margins through enrollment in prepaid health delivery plans.

Chapter II

REVIEW OF RELATED LITERATURE

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CHAPTER II

REVIEW OF THE LITERATURE

Numerous factors govern the rates of utilization of health services. The following discussion will summarize the findings of previous research on hospital utilization, especially that of low-income populations in prepaid group practices.

2-1 Hospital Utilization

M. I. Roemer and M. Shain[1] reviewed the evidence that was available up to that time (1959) on the determinants of hospital admissions and hospical days under insurance coverage. These determinants were described as follows:

1. Patient determinants

    - Incidence and prevalence of illness
    - Attitudes towards illness
    - Cost of medical care to the patient
    - Marital status
    - Housing and social level

2. Hospital determinants

    - Supply of beds
    - Efficiency of bed utilization
    - Mechanisms of hospital remuneration
    - Availability of alternative bed facilities
    - Outpatient services

3. Physician determinants

    - Supply of physicians
    - Method of medical remuneration
    - Nature of community medical practice
    - Medical politics in the hospital
    - Level of medical alertness
    - Medical teaching needs

Theoretically, all of these factors must exert an influence on hospital utilization, Roemer and Shain speculated. There was support from empirical data pointing to the influence of these factors. However, bed supply was singled out as being the most pragmatically effective mechanism of control. Subsequent findings on hospital utilization under PGP models continue to corroborate the evidence that bed supply is an important explanatory variable.

In 1963 Klarman[2] assessed the general influence of health insurance on hospital utilization. Among the many analytic insights that he provides is the observation that, while in a certain study by Densen et al[3] HIP enrollees had lower hospitalization rates than Blue Cross-Blue Shield subscribers, HIP rates were the same as those for persons enrolled in a union self-insured plan that permitted free choice of physician but controlled hospital use. This leads to the hypothesis that control of hospital use was the specific deciding factor. The attempted identification of this structural variable in PGPs as the factor affecting hospitalization rates is important.

Klarman also noted that the concern about "overutilization" or "underutilization" of hospitals is a moot point, since there were no objective standards of "proper" utilization. Lower hospitalization rates per se cannot be interpreted as evidence of good performance. It is crucial to know which type of hospital utilization is being reduced: "necessary" or "excess."

Donabedian[4], in a well-known review written in 1969, attempted to analyze the differential in hospital utilization resulting from several types of medical practice modalities in terms of the diagnostic composition. The evidence showed that it was precisely in those areas most suspected of unnecessary hospital admissions (tonsillectomies, cholecystectomies, upper respiratory infections, and gynecological surgery) that the rates for PGP admissions were substantially lower than those for non-PGP modes.

In a review published in 1971, Klarman[5] concluded that, based on the implications of two HIP studies conducted in the 1950's, there is a saving of about 20 percent in patient days and admission rates under PGP plans when compared to other health insurance plans. Since the Klarman review there has been more evidence reinforcing the findings of the earlier studies.

Shapiro[6], in a 1971 paper, compared the hospital utilization of HIP enrollees with matched non-HIP persons and estimated the HIP rates to be 25 percent lower.

The Social Security Administration[7] in 1971 reported that the per capita expenditures (not rates of use) for hospitalization of those over 65 were from 11 to 18 percent lower for those enrolled at the Kaiser-Permanente PGP than for those not enrolled at Kaiser. If expenditures are broadly assumed to measure rates of use, this would support the findings mentioned above.

However, it would appear that there is less substantive evidence of lower rates of hospital use in PGPs for those over 65. Where there is a differential for the population over 65, that differential is small, as Klarman points out[5].

Data from the Federal Employees Health Benefits Program was reported by George St. J. Perrott[8]. It spans the period 1961-1968 and covers a population of eight million Federal employees, focusing on the comparison of hospital utilization rates in various health plans. At each age-sex level examined, the hospital utilization rates in PGPs were significantly and consistently lower compared with open-market "Blue" or other commercial indemnity plans.

A more recent study by Riedel et al[21], published in January of 1975, compared the utilization of about 6,000 Federal employees in Washington, D.C. enrolled in a Blue Cross-Blue Shield Plan (BC-BS) with a similar group enrolled in a prepaid group practice plan (PGP). There were substantial differences in rates of hospital admissions per 1,000 membership years; it was 121 for BC-BS and only 69 for PGP enrollees.

Hill and Veney[9] reported in 1970 on an experiment in insured outpatient benefits. Their evidence supports the proposition that increased ambulatory services per se do not reduce hospital use, but in fact, temporarily increase it. Klarman argues that these findings effectively destroy the hypothesis that increased ambulatory (preventive) services are an explanatory cause for reduced hospital use in PGPs.

In a recent (1973) review of the evidence on HMO performance, Roemer and Shonick [10] concluded that "the additional evidence (since Donabedian's 1969 paper) suggests that the 'prepaid group practice' (PGP) model of HMO continues to yield lower hospital use, relatively more ambulatory and preventive service, and lower overall costs (counting both premiums and out-of-pocket expenditures) than conventional open-market fee-for-service patterns..." But they also add that the "HMO entails hazards of underservicing and distorted risk-selection."

2-2 Utilization of Services by Low-Income Populations in PGPs

Since this study deals specifically with low-income populations, it is appropriate to review the evidence of health services utilization of low-income populations in PGPs.

Greenlick et al [11] in 1972 compared the utilization of medical care services by the general membership of a prepaid group practice at the Kaiser Foundation Health Plan in Portland, Oregon, with that of 1,500 urban indigent families from an OEO health center who were integrated into the Kaiser Plan. They found that the rates and patterns of utilization between the two populations were essentially the same. They establish that much of the reported differences in medical care utilization between poverty groups and other sections of the general population appear to relate to differential access to care, and that they seem to disappear when financial and other barriers to health care are removed.

Sparer and Anderson[12] in 1973 reported similar results on an integration by OEO of 500 low-income families into each of three PGP plans (Kaiser, Fontana; Group Health Cooperative of Puget Sound; HIP at Suffolk) and of 1,500 low-income families into Kaiser at Portland. Within six months the level of utilization of health services by the low-income population in all four integration experiments stabilized to a level that did not exceed the level of the regular plan. Most interestingly, they recorded a drop in hospital use: the national average for low-income people below age 65 is 1,000 days per 1,000 low-income persons; the PGP-integrated OEO low-income population had a rate of only 600 days per 1,000 enrollees.

(For additional literature on Title XIX recipients in PGPs, see references 17 and 18.)

2-3 Summary of Literature Reviewed

In summary, the above references support the following conclusions:

- That the rates of hospital use by enrollees of a PGP are considerably lower than those for members of non-PGP plans;
- That low-income populations when enrolled in PGPs very soon achieve levels of utilization that are similar to other plan members, provided they do not have to pay anything for those services.

Chapter III

METHODOLOGY AND PROCEDURES

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CHAPTER III

METHODOLOGY AND PROCEDURES

3-1 Research Methodology

The research methodology is experimental. It investigates possible cause-and-effect relationships by exposing an experimental or Study Group of 1,000 D.C. Medicaid patients to a treatment (i.e., enrollment in a PGP) and comparing the results (change in rates of utilization of health services) to that of a Control Group (the D.C. Medicaid universe) not receiving the treatment.

3-2 Research Design

The design chosen is an adaptation of the classic experimental "Pre-test, Post-test, Control Group Design,"

$$\begin{array}{lcl} 0_1 & X & 0_2 \\ 0_3 & & 0_4 \end{array}$$

as described by Suchman.[13]

In this design one begins by setting up two equivalent groups which are as alike as possible before the program is put into effect. Although such equivalence is best obtained by random assignment into experimental and control groups, in this case it was not administratively feasible to assign randomly 1,000 patients to enroll in the PGP because some of them might not wish to enroll. Instead they were allowed to volunteer for enrollment although this introduces into our design all the risks of self-selection. To counteract such effects as much as possible, we resorted to selective matching of this Study Group with the Control Group of the Medicaid universe on the basis of age, sex, program category, and basis of eligibility in proportionate distribution as follows:

Study Group		D.C. Medicaid Universe (Control Group)	
Age	Percent	Age	Percent
1-4 Years	13	1-4 Years	15
5-9	17	5-9	17
10-14	17	10-14	15
15-19	14	15-19	13
20-24	5	20-24	8
25-34	7	25-34	7
35-44	6	35-44	4
45-54	3	45-54	2
55-64	1	55-64	1
1-64	84	1-64	82
APTD	6	APTD	7
1	3	1	3
65+	7	65+	8
934*	100	196,600*	100

At appropriate time intervals an "after" measure is made which may be compared with the "before" measure for both Study and Control Groups to indicate the changes produced by the experimental program (i.e., enrollment in a PGP). The design can be repeated in a different form.

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* Total number of persons.

	Before	After	
Study Group	X_1	X_2	$d=X_2 - X_1$
Control Group	X'_1	X'_2	$d'=X'_2 - X'_1$

The test of program effectiveness is indicated by the significance of the difference between d and d'. "The logic of the design is foolproof and ideally there is no element of fallibility. Whatever differences are observed between the experimental and control groups, must be attributable to the program being evaluated." This quote from Suchman applies strictly only if Study and Control Groups are randomly assigned. In this study the Study Group was, to some degree, self-selected. (See Section 3-3)

Previous reports had indicated that when a low-income population is introduced into a PGP, it takes time before the rates of utilization of care can stabilize. To deal with this we resorted to multiple measurements both before and after the program start date. (July 1, 1971)

Accordingly, we introduced into our design as much as we could of the following time series design as described by Isaac and Michael.[14]

	Pretest	Treatment	Post-Test
Study Group	T_1 T_2 T_3 T_4	X	T_5 T_6 T_7 T_8
Control Group	T'_1 T'_2 T'_3 T'_4		T'_5 T'_6 T'_7 T'_8

This design is superior to the one described above because it can be the source of vital information that a single post-test design will not reveal. For instance, if a variable X has a short term influence which tends to disappear with time, this design will pick up the trend.

Our final research design is shown in (Figure 3)*. We feel the design controls for all the factors that could jeopardize internal validity except selection and maturation. We have already discussed above how we have tried to compensate for selection by matching, on an age, sex, and program category basis, with the Control Group. Maturation is a factor. Over a period of 22 months, the maximum time period of comparison in this study, the identical 934 individuals do "age." However, we assume they don't age enough to change the rates of utilization significantly.

The design seems to control very well for all the factors that jeopardize external validity.

3-3 Selection of the Study Group

A group of 1,000 individuals was drawn from Service Area 7 in the District of Columbia. The District has nine service areas. (See Figure 1) Service Area 7 is 4.5 square miles and, according to the 1970 Census, had a total population of 114,401 of whom 12,395 individuals (or 10.8 percent) in 4641 families were Medicaid eligibles. Approximately 4,258 letters were sent out in early 1971 to Medicaid heads of households in Service Area 7 announcing the program and inviting them to enroll. As an inducement, two added advantages were offered that would be available exclusively to them:

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* All figures are at the end of this report.

- A waiver of eligibility redetermination for three years, starting July 1, 1971;
- Free dental services.

Responses indicating interest were received from 1027 families. They were interviewed and enrolled by the D.C. Government's Bureau of Medical Eligibility on a first-come-first-served basis, subject to a maximum of 1,000 individuals and to certain quotas of broad age groups that were established to represent a cross-section of the total D.C. Medicaid population:

- 65 percent were under 21 years of age
- 20 percent were between 21 and 65 years
- 8 percent were over 21 and 65 years
- 5 percent were disabled (APTD)

The PGP had no part in the selection of the Study Group.

The age/sex pyramids on Figure 2 show the comparable distribution by age and sex of the Study Group and the total

D.C. Medicaid universe, which served as a Control Group.

In addition to being a Medicaid resident of Service Area 7, (where the PGP out-patient clinic was located) and volunteering to join the program, the Medicaid eligible also had to fulfill one other requirement in order to be counted in the Study Group: he must have had at least one month's eligibility in the Medicaid fee-for-service program prior to July 1, 1971, and at least one month's eligibility in the PGP program after July 1, 1971.

To summarize, the following conditions had to be met by every participant in order to be counted in the Study Group.

- Residence in the District of Columbia, Service Area 7;
- Voluntary enrollment;
- At least one month's eligibility (prior to July 1, 1971) in the Medicaid fee-for-service program and one month's eligibility (after July 1, 1971) in the prepaid group practice program.

Enrollment in the PGP meant removal of the Medicaid card (which was used very much like a credit card to purchase medical services from any participatory Medicaid provider in the District) and substitution of a PGP card which entitled the patient to obtain medical services only from the staff physicians of the four clinics run by the PGP. Services from any other non-PGP physician could be obtained only with express authorization from the PGP, and with the understanding that the PGP itself would pay that physician's bill directly. In other words, the Study Group was "locked into" the PGP system, voluntarily, for three years. However, a patient could always terminate membership in the PGP and revert to the Medicaid Universe, but if he did so he was not allowed to shuttle back into the PGP. The voluntary termination rate was less than three percent over the 22-month period of this study. An additional four percent were terminated from PGP membership by involuntary means, such as death, incarceration, moving to a residence outside the District of Columbia, etc. These terminations were, in part, responsible for reducing the Study Group from 1,000 to 934 individuals. Lastly, since Medicaid eligibles who wished to enroll in the PGP had to appear in person, institutionalized persons were in effect screened out of the Study Group.

3-4 Demographic Profile of the Study Group

The D.C. Medicaid population (Table 2) and the Study Group (Table 3) consist primarily of single-female-headed families with a high proportion of children.

- Children under 19 years constitute 60 percent of the total population and are about equally divided between the sexes.
- Adults 19 to 64 years represent 22 percent of the total. There are virtually no males between ages of 21 and 64 years.
- The over-65 age group constitutes approximately eight to nine percent of the population, and because of the greater longevity of females, there are more than twice as many females in this group as there are males.
- If all age groups are lumped together then, females (62 percent) outnumber males (38 percent) by about

two to one in the D.C. Medicaid Universe as well as in the Study Group.

- The special category of the disabled (APTD) are adults that straddle the age groups 35 through 65.

Table 3 reports the detailed age-sex composition of the Study Group of 934 individuals. Because utilization data on newborns is often not available, due to the administrative time lag involved in issuing a new Medicaid card for the infant, children under one year of age have been excluded from the comparison, and are shown separately in Table 3.

Similarly, the Medicaid utilization data on those 65 and older (Old Age Assistance) is incomplete, since it reports only "residual" payments (deductible and co-insurance) after Medicare has paid its share of the bill. When Medicare pays all of the bill, the transaction does not show up at all on Medicaid files. Consequently, those over 65 are excluded from the study. This leaves us with a Study Group of:

- 781 individuals in AFDC between the ages 1 and 64
- 53 disabled individuals in APTD

834 TOTAL

In the Study Group, as in the D.C. Medicaid Universe, about 66 percent are categorically indigent, while about 33 percent are medically indigent.

3-5 The Benefit Package

The benefit package provided by PGP to the 1,000 Medicaid enrollees included:

- Complete ambulatory care
- Inhospital care
- Skilled nursing home care
- Short-term psychiatric care
- Laboratory services
- Optical services (including eyeglasses)
- Drugs (prescription and over-the-counter)
- Podiatry
- Radiology
- Physical therapy
- Dental care
- Ambulance service

The D.C. Medicaid fee-for-service benefit package provided all the above services except dental care and ambulance services.

3-6 Definition of Terms and Measurement Techniques

The following four categories of services will be used for comparison of utilization rates before and after entrance into the PGP and for comparison with the Control Group, i.e., the D.C. Medicaid Universe:

1. Physician Encounters. The category of physician encounters includes all encounters with physicians in private offices, at home, in clinics, in out-patient departments, and in emergency rooms in hospitals (the latter being used frequently as walk-in out-patient clinics in the large hospitals of the District of Columbia). Visits to patients in hospitals were excluded from the comparison because the PGP did not report these visits. It was not possible to break down physician encounters by physician specialty because the reporting system of the Medicaid fee-for-service system did not provide adequate data.

2. Hospital Admissions. This category includes hospital to all short-term general hospitals plus short-term psychiatric

hospitals. Hospital admissions are further broken down by medical, surgical, and obstetrical episodes.

3. Hospital Days. The days counted under this caption are those pertaining exclusively to the short-term admissions described above.

4. Drug Prescriptions. This category includes all medicines, both prescription and over-the-counter drugs.

Comparison is restricted to these four types of services because they constitute over 85 percent of the total dollar expenditure on services. For instance, the breakdown for FY 1972 on a total of $45.8 million in Medicaid services is as follows:

- Hospital Care	53.1%	85.3%
- Physician Encounters	25.2%	
- Drugs	7.0%	
- Laboratory and X-Ray	0.4%	
- Nursing Homes	12.1%	
- Other Providers	1.8%	
- Home Health	0.4%	
- Other	0.1%	
	100.1%	

Nursing home days pertain heavily to the institutionalized population, whereas no one in the Study Group was in an institution at the time of the study. "Other provider" services could not be appropriately compared in detail because there were too few.

Rates of utilization for physician encounters and drug prescriptions are calculated as ratios of the mean number of services per patient year. The eligible population at risk is annualized; that is, each month of eligibility for program services is equivalent to 1/12 of a patient-year. Counts are also made of the unduplicated number of persons at risk or eligible at any given time during a given year. Rates of hospital admissions and hospital days are similarly measured as ratios per 1,000 patient-years.

There are a number of bases for eligibility for Medicaid. The following eligibility categories account for the total number of people in the Study Group. The numbers in parenthesis account for the number of Study Group members that fall into each of these categories.

- AFDC...Aid to Families with Dependent Children (807)
- AB.....Aid to the Blind (3)
- OA.....Old Age Assistance (71)
- APTD...Aid to the Permanently and Totally Disabled (53)

The following interval scales are used to measure age groups in the AFDC and AB categories:

Under 1
1-4
5-9
10-14
15-20
21-24
25-34
35-44
45-54
55-64

All persons in OA are found in the age group 65+. All persons in APTD are in one group, regardless of age. It seemed logical not to put APTD persons with their respective age groups because their utilization of health services is more dependent on the nature and degree of their disability than on their age. As will be seen, utilization of services by APTD persons is several times higher than that for other categories.

A further breakdown of the Study Group by categorically indigent recipients (CI) and medically indigent (MI) was not done lest the cells become too small for statistical purposes

3-7 The D.C. Fee-for-Service Medicaid System

In FY 1972 D.C. Medicaid eligibles, numbering 196,000 individuals, received services from the following providers on a fee-for-service basis in the District of Columbia[53]:

Type of Provider	Number of Providers
Private physicians	767
Optometrists	49
Opticians	25
Podiatrists	28
Home Health Care	1
Pharmacies	158
Laboratories and X-Ray	24
Hospitals	15
Nursing Homes	10
Neighborhood Health Centers	8
Public Health Clinics	23

These providers submit four types of claims for payment.

The physician in private practice submits a Type 1 form, which identifies the patient through an ID number, the provider by specialty through a provider code, the service performed by a type of service code, and the date on which the service was performed. Type 1 claims constitute two-thirds of all physician claims.

Salaried physicians in institutions do not submit a claim directly. Instead the institution records the visit and submits a claim on a Type 2 form, which identifies the patient by an ID number, the institution by a provider code, and the date of service. Neither the physician, his specialty, nor the type of service, other than the fact that it was an out-patient visit, is identified. Because of this, physician encounters could not be broken down by physician specialty in this study. Type 2 claims constitute one-third of all physician services.

Pharmacy claims are submitted on a Type 3 form which identifies the patient by an ID number, the pharmacy by a provider code, the drug quantity in units and the drug name by a code from the Medicaid formulary of nearly 2,400 drug items.

All of the data submitted by providers on Type 1, Type 2, and Type 3 forms are transferred to magnetic tape on a daily basis, in the sequence in which claims arrive in the mail. They are processed through a computer which is programmed to check all claims to verify the Medicaid eligibility of the patient. Then the amount to be paid to the provider is automatically computed and recorded on the tape according to the following schedule:

- Type 1 Claim: by a Relative Value Scale which allocates to each service a certain number of "units" and a fixed dollar payment per unit.

- Type 2 Claim: by an annually negotiated flat rate per out-patient visit with each institution providing such services, regardless of the specifics of each out-patient visit.

- Type 3 Claim: by the specified formulary rate of dollars per unit drug dose.

Hospital and nursing home claims are submitted on a Type 4 form which carries a large number of details of which only a few are transferred to magnetic tape; these are the patient's ID number, the provider institution, the dates of admission and discharge, the total charges, and the iterim amount paid to the provider (based on the previous year's per diem costs). The one essential item missing on the tapes is the discharge disgnosis. So, for purposes of this study, we had to go back to the medical records of each individual patient who had a hospital or nursing home admission and abstract the data on discharge diagnosis from the medical record.

Types 1, 2, 3, and 4 claim forms, when transferred to magnetic tape and computed for payment, constitute the Paid Claim File from which the NUMERATOR in the rates of utilization was obtained. To determine the eligibility of each person in the Study Group, the Master Eligibility File was consulted. Since up to the five most recent periods of eligibility are listed for each individual, it was not difficult to reconstruct an eligibility record spanning the study period of 22 months prior to July 1, 1971. This latter procedure gave the DENOMINATOR in the rates of utilization, in terms of the number of person-years, or the number of "annualized persons at risk."

The Paid Claims File is maintained by fiscal year schedules based not on the date the service was performed but on the date of payment of the claim. As a result, very often services rendered in FY 1971 are found in the FY 1972 Paid Claims File.

For purposes of this Study, nearly three million claims in the Medicaid Paid Claims Files for FY 1970, FY 1971, and FY 1972 were searched. From this mass of data, only those claims pertaining to the 934 Medicaid enrollees in the Study Group were selected, and it is those claims that form the basis of the Study Group "before" data for 12, 18 and 22 months prior to July 1, 1971.

For the Control Group (the D.C. Medicaid Universe), over three million Medicaid paid bills from FY 1972 and FY 1973 files, and 333,000 eligibility records were matched to determine the unduplicated count of individuals at risk (196,000 persons), the annualized population at risk (159,330 person-years), and the rate of utilization of health services by this population during FY 1972. These rates are broken down by age, sex, program category, and type of service. We have extracted pertinent data for comparison and use in this study.

Utilization by the total D.C. Medicaid Universe for FY 1971 was not calculated in detail due to the fact that the Medicaid Master Eligibility File maintains only the five most recent periods of eligibility which cover approximately two years, and at the time of data processing (October 1972) it was felt that the file might have dropped the eligibility periods for a number of persons in the earlier half of FY 1971, and thus the DENOMINATOR base (annualized population at risk) could not be accurately reconstructed.

However, for the purpose of our research design, such detailed utilization figures are not absolutely necessary. What we have to compare is the overall use of services by the Control Group in FY 1971 as against FY 1972. Table 4 shows the available data on the rates of utilization (per recipient, not per annualized person at risk) for FY 1970, 1971 and 1972. Hospital discharges climb from 200 to 221 to 257 discharges per 1,000 recipients. Total days of hospital care show an upswing from 2,041 to 2,006 to 2,314 days per 1,000 recipients. Physician visits rise from 1,823 to 2,913 to 3,233 visits per 1,000 recipients (though this is only the figure for visits to private physicians and does not include visits to physicians in clinics, out-patient departments and emergency rooms). Utilization of prescribed drugs mounts steadily from 4,310 to 5,382 to 6,198 prescriptions per 1,000 recipients.

The point to bear in mind here is that, while the Study Group of 934 individuals shows a decline in utilization from FY 1971 to FY 1972 (presumably because of enrollment in the PGP), the Control Group of the D.C. Medicaid Universe shows an increase in utilization, as borne out by the data in Table 4.

3-8 Provider Profile of the Prepaid Group Practice

The PGP (Group Health Association) has about 83,000 subscribers who receive their medical care from 80 salaried physicians in four ambulatory clinics in the Metropolitan Washington Area. Three clinics are within the District of Columbia. This gives a ratio of about 0.95 physicians per 1,000 members, and about 0.86 "other personnel" per 1,000 members. The "other personnel" include optometrists, psychologists, lab, x-ray and EKG technicians, physical therapists, social workers, podiatrists, etc. Registered nurses number 0.83 per 1,000 members. Other nursing staff number 0.52 per 1,000 members. The PGP owns no hospitals but patients are admitted in District of Columbia hospitals where PGP physicians have staff privileges.

The Study Group of 934 individuals, upon enrollment in the PGP, received most of their ambulatory care at two of the three PGP ambulatory clinics, and their hospital care from nine hospitals, all located in the District of Columbia. These hospitals may also be used by Medicaid Universe patients.

Each service rendered by the PGP to any member of the Study Group was reported on a punched card. These punched cards provided the Study Group "after" data for periods 12, 18, and 22 months after July 1, 1971. Only services authorized by the PGP were included in these cards. Any claim for a service received by a PGP enrollee out-of-plan was rejected for payment by the Medicaid computers, and since each enrollee traded his Medicaid card for a PGP card at the time of enrollment, claims for out-of-plan utilization were negligible. Also, out-of-plan services paid for directly by the enrollee were considered negligible because of the limited financial resources of Medicaid eligible families. This assumption was verified by the survey results reported in Section 6-8.

3-9 Statistical Methods

The comparison in Study Group rates of utilization before and after enrollment in the PGP was tested statistically as follows. Data on physician encounters and drug prescriptions were tested using a parametric test (a paired comparisons t-test) to determine whether the mean difference in each age group was significantly different from zero at the .05 level. For instance, in the age group (1-4), if A was the annual rate of utilization for an individual after enrollment and B was the annual rate for the same individual before enrollment, then the difference (d_1) in rates for that individual:

$$d_1 = A - B$$

If there are n individuals in age group (1-4) then

the observed mean $\bar{d} = \left(\frac{\Sigma d}{n}\right)$

and $$\sigma d = \sqrt{\frac{\Sigma d^2 \frac{(\Sigma d)^2}{n}}{(n-1)}}$$

$$t = \left[\frac{\text{observed mean - hypothesised difference}}{\text{Standard Error of the observed mean}}\right]$$

$$= \frac{\bar{d} - 0}{\frac{\sigma_d}{\sqrt{n}}}$$

$$= \frac{\bar{d}}{\sqrt{\dfrac{\Sigma d^2 - \dfrac{(\Sigma d)^2}{n}}{n(n-1)}}}$$

To be significant, the value of t at the .05 level, for an infinite number of degrees of freedom, should be greater than 1.96.

Assuming that the number of hospital admissions is approximately Poisson distributed, we have

$$Z = \frac{\bar{X}_A - \bar{X}_B}{\sqrt{\dfrac{\bar{X}_A}{N_A} + \dfrac{\bar{X}_B}{N_B}}}$$

where the mean number of admissions after $X_A = \frac{A}{N_A}$ (A being the number of admissions for a given age group after enrollment and N_A being the annualized number of persons in the same age-group after enrollment) and the mean number of admissions before $X_B = \frac{B}{N_B}$ (B being the number of admissions for the same age group as above, but before enrollment and N_B being the annualized number of persons in the same age group before enrollment).

The null hypothesis Ho is that there is no difference in the mean number of admissions after enrollment in the PGP. The alternative hypothesis Hi, which is our hypothesis, is that there is a decrease in the mean number of admissions after enrollment in the PGP. Since we anticipate all the differences to be in one direction only (a decrease) we are using a one-tailed Z test in which the critical value of $\mathcal{Z}$ must exceed 1.65 to be significant at the .05 level (or 1.96 at the .025 level, or 2.33 at the .01 level).

This test is conservative because the estimated standard error of the difference is certain to be lower than the actual standard error of the difference, since the covariance between the "before" mean and the "after" mean is not included in the above formula for the estimation of variance. We are not including this covariance term because it is difficult to estimate. However, if this term could be estimated it would give larger values of $\mathcal{Z}$ and would indicate that the differences in mean number of admissions are even more significant than shown in Table 7a on page T-8. Our test is, therefore, conservative.

Chapter IV

THE RATES OF UTILIZATION OF SERVICES

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CHAPTER IV

THE RATES OF UTILIZATION OF SERVICES

Findings are reported in four major areas:

- Ambulatory physician encounters
- Short-term hospital admissions
- Short-term hospital days
- Drug prescriptions

Utilization data are presented by age group, with the age group for each person being determined as of July 1, 1971, which was the date for beginning the enrollment of Medicaid patients into the PGP. (Enrollment was virtually completed in three months) Aging of the Study Group during the 22 months _before_ and the 22 months _after_ the July 1, 1971, cutoff date is assumed to be insignificant.

4-1 Ambulatory Physician Encounters

Total annual ambulatory physician encounter rates per enrollee (Table 5)* aged 1 to 64 was _steadily and significantly lower_ 12, 18 and 22 months respectively _after_ enrollment in the PGP than in the comparable periods before enrollment. Over a 22-month period it was reduced 15 percent, from 4.16 to 3.54 visits per person per year.

Five out of nine age groups showed a decrease in utilization. The most significant differences were among the age groups 20 to 24 and 25 to 34, which consist chiefly of women in the childbearing age. In both these age groups the utilization was cut in half, from about ten visits before entrance to about five visits per person per year after entrance.

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* All tables are found at the end of this report.

The disabled showed virtually no change in utilization, 10.22 visits before, compared to 10.09 after. This rate is about the same as for adults not disabled, ages 45-54.

Trend data on ambulatory physician encounters is shown in Table 6. Considered over consecutive six-month periods, the first six months shows a start-up high of 5.55 visits for all ages, which declines steadily to 4.33 in the second six months and stabilizes to 4.15 in the third six months. This pattern of an initial high rate for the first six months, followed by a tapering off in the second six months, and then a stabilization in the third six months, is seen in nine of the thirteen groups shown in Table 6.

Viewed on a cumulative basis the rate of utilization for all age groups again declines from 5.55 to 4.88 to 4.62 to 4.50 visits per person per year over 6, 12, 18, and 22 months, respectively, of experience in the PGP. In eleven of the thirteen different groups shown in Table 6, the decline is noticeably steady. In only two age groups, 20-24 and 25-34, there is no decline, and the rate seems to hold constant over the entire 22 months of PGP experience. These are the same two age groups, mentioned earlier, whose rate of utilization had been drastically cut in half by entrance into the PGP.

When compared with the Control Group aged 1-64 (the 1972 D.C. Medicaid Universe in Table 5), the Study Group in its fee-for-service days in the "before" period appears to have had a slightly higher utilization: 4.16 visits versus 3.91 vists per person per year for the age group 1-64. The most striking differences are in the following age groups:

(20-24)	9.27 visits versus 8.06
(25-34)	10.15 visits versus 8.28
(35-44)	10.11 visits versus 7.19

The net effect of enrollment of 781 AFDC Medicaid eligibles aged 1-64 into the PGP over a period of 22 months was a diminution of 15 percent in the utilization rate of physician visits from 4.16 to 3.54 visits per person per year. In contrast, over the same time period, utilization by the 53 disabled (APTD) persons was virtually unchanged, 10.22 visits before, versus 10.09 visits after.

4-2 Admissions to Short-Term Acute Hospitals

Aggregate annualized hospital admission rates per 1,000 enrollees (Table 7) in the Study Group ages 1-64 were significantly lower (76 admissions per 1,000 persons per year) after entrance into the PGP when compared to the rates before entrance (109 admissions per 1,000 persons per year). This represents a drop of 30 percent for all persons between 1 and 64 years of age.

Six of the nine age groups between 1 and 64 years registered a decline, one showed no change (no admissions before or after) and two groups among teenagers (10-14 and 15-19) showed an increase.

The disabled registered a 49 percent decrease in hospital admissions; down from 149 admissions per 1,000 persons per year before, to 76 admissions per 1,000 persons per year after.

The **Z** values for the differences in the mean number of admissions is shown in Table 7a page T-8.

Compared to the Control Group (D.C. Medicaid Universe) which recorded 139 admissions per 1,000 persons (ages 1-64) per year in FY 1972, the Study Group (Table 7) showed a slightly lower rate of 109 admissions per 1,000 persons (ages 1-64) per year during its fee-for-service experience in the 22-month before period.

4-3 Short-Term Acute Hospital Days

Aggregate annualized hospital days per 1,000 enrollees (Table 8) in the Study Group age 1-64 were significantly lower (412 hospital days per 1,000 enrollees per year) after entrance into the PGP than before entrance (602 hospital days per 1,000 enrollees per year). This is a 32 percent decrease in utilization.

Seven of the nine age groups between the ages 1 and 64 recorded a decrease in utilization. The only one showing an increase was the teenage group 15-19.

The disabled showed a very marked decrease (62 percent); down from 2,242 hospital days per 1,000 persons per year in the "before" period to 856 hospital days per 1,000 persons per year in the "after" period.

Compared to the Control Group which showed 744 hospital days per 1,000 persons, the Study Group utilization rate of 412 days per 1,000 persons represents a decrease of 45 percent.

Comparison of average lengths of stay per admission for all service categories added together did not show any significant differences (Table 9). For the age group (1-64) it was:

5.53 days per admission, before enrollment for the Study Group,

5.44 days per admission, after enrollment for the Study Group, and

5.36 days per admission for the Medicaid Universe.

Table 10 displays data comparing the length of stay by service category.

- For obstetrical cases, 3.9 days before, versus 3.3 after (decrease 0.6)
- For surgical cases, 5.5 days before, versus 6.7 after (increase 1.2)
- For medical cases, 7.6 days before, versus 9.9 after (increase 2.3)
- For all cases combined 5.53 days before, versus 5.44 after (decrease 0.09)

While there is a decrease of 0.6 days per admission in the length of obstetrical stays, the surgical and medical stays are 1.2 days and 2.3 days longer, respectively.

Table 11 on the number of hospital admissions per 1,000 per year shows that while the rates per 1,000 persons per year for obstetrical admissions are the same (41.8 before versus 42.3 after), enrollment in the PGP has cut surgical admissions approximately in half (by 46 percent) from 32.8 to 17.8. Likewise, medical admissions have been reduced by 57 percent from 34.4 to 14.9.

Table 12 on the number of hospital days per 1,000 persons per year shows that while the number of obstetrical hospital days declined after enrollment by 12 percent (from 161 days to 141 days), surgical days decreased 33 percent (from 180 days to 120 days) while medical days fell the sharpest at 44 percent (from 261 days to 147 days).

4-4 Drug Prescriptions

The annualized rate of utilization of prescribed drugs per 1,000 enrollees (Table 13) was also significantly reduced for the Study Group after enrollment as compared to before enrollment. The overall annual prescription rate was 18 percent less for the Study Group 22 months after enrollment (2.42 prescriptions per enrollee per year) compared to the utilization before enrollment (2.94 prescriptions per enrollee per year).

Five of the nine age groups in Table 13 showed lower drug use rates 22 months after enrollment. Using the number of ambulatory physician encounters (Table 5) as a denominator produces a rate of 0.71 prescriptions per physician encounter before entrance into the PGP, compared to 0.68 after entrance, a difference of only four percent.

Among the disabled group, there was virtually no change in the rate after enrollment, the rate remaining at about 12 prescriptions per year. This rate, however, is about *twice* the rate for other adults in the age group 35-64.

Trend data on drug utilization is shown in Table 14. Considered over three consecutive six-month periods for all ages, the first six months shows an initial rate of 4.18 prescriptions per person per year, which drops to 3.49 in the second six months, then climbs again to 3.8.

In 12 out of 13 groups shown in Table 14, there is a general pattern of *decline* between the first six-month period and the second six-month period. But the decline stops there. Rather, in the third six-month period there is a slight reverse in trend, and 11 out of 13 groups then show a slight *increase* in utilization.

When examined over *cumulative* periods of 6, 12, 18 and 22 months, the rates show an initial 4.18 prescriptions per person per year, followed by a fairly constant rate of 3.74, 3.76 and 3.68 prescriptions per year, respectively. This pattern is shown by 10 out of the 13 groups in Table 14.

When compared with the Control Group ages 1-64 the Study Group has a lower rate of utilization: 2.42 prescriptions per person per year, versus 2.64. (See Table 13)

Table 15 compares the rates of utilization of prescription drugs by the PGP Study Group and the D.C. Medicaid Control Group by therapeutic category for all ages and both sexes. The top 30 therapeutic categories account for more than 90 percent of prescribed drugs for both the Study and the Control Groups. Eighty percent of the top ten therapeutic categories are the same, the differences being substitutions of antidiabetic agents and expectorants which are prescribed more frequently for the Study Group, by adrenal corticosteroids and bronchodilators which are prescribed more frequently for the Control Group. The top three therapeutic categories are *identical* -- diuretics, mild analgesics and antianxiety agents. The top ten therapeutic categories account for over *half* of drugs prescribed for both the Study and the Control Groups.

While the *rank* ordering of drugs for patients by frequency of categories is very similar for the Study Group as compared to the Control Group, the *rates* are markedly different. Consistently, rates of drugs dispensed per 1,000 persons by category are slightly lower for the Study Group; for example, the rate of diuretics is 257 per 1,000 persons for the PGP Study Group and 287 per 1,000 persons among the Control Group. Similarly, a slightly lower rate persists for the less commonly prescribed drugs among the top ten categories; for example, tetracyclines are dispensed at the rate of 118 per 1,000 persons for the Study Group and at the rate of 138 per 1,000 persons for the Control Group.

In comparing specific drugs one would expect much more variation between the Control Group and the Study Group since there are 1,197 specific drugs as compared to only 90 specific therapeutic categories. In addition, since the specific drugs include both brand and generic name drugs, similar drugs by different brand or by generic names may be favored by the 80 PGP physicians who are sequestered in three facilities in contrast to the far more numerous (767) and widely dispersed Medicaid fee-for-service providers giving care to the Control Group. Such differences would not necessarily mean that significant differences exist in the pattern of medical care treatment. Since the analysis in the previous section indicated that there are marked similarities between the Control and the Study Group when drugs are classed by therapeutic categories, the classification by specific drugs was expected not only to reveal some variations among these but also some similarities.

The first table reviewed (Table 16) reflects some of the variations. Thus, only six of the top ten specific drugs are the same for the Study Group and the Control Group as compared to eight out of the top ten among the therapeutic categories (Table 15).

Diuretics are the category of drugs most frequently prescribed for both the Study Group and the Control Group. However, analysis by specific drug indicates that different specific diuretics were used among the two populations. The Study Group was more likely to receive Aldomet and Hydrodiuril while Lasix was the most common and Aldomet was the second most common for the Control Group. While Valium was the most commonly used antianxiety agent for the Control, Librium was the most commonly used antianxiety agent for the Study Group.

In regard to specific drug use rates, one might reasonably expect substantially higher rates per 1,000 persons, for use of specific drugs in the Study Group as compared to the Control Group. The PGP physicians are in close contact with one another and are exposed to similar stimuli -- conferences, detail men, journal advertising, and personal experiences -- in contrast to physicians providing fee-for-service care at large in the community or working in out-patient facilities. Consequently PGP physicians, as a group, should use a narrower spectrum of drugs than the physicians working in the Medicaid fee-for-service universe, and prescribing rates for the Study Group should be higher for each of the specific drugs used. This is found to be so. For example, over 90 percent of drugs prescribed for the Study Group by PGP physicians are represented by 125 drug items in contrast to 147 drug items prescribed for the Control Group by fee-for-service Medicaid physicians (Table 16).

The *most common specific antibiotic* used by both the PGP Study and Control Groups is *tetracycline*. Rates of tetracycline use are 112 per 1,000 persons per year for the Study Group and only 67 per 1,000 persons per year for the Control Group.

There are some variations, however. Among the antianxiety medicines, one of the most common categories of drugs used, Librium, is the most commonly used in the Study Group. It is prescribed at the rate of 103 per 1,000 persons in comparison to a rate of 95 per 1,000 persons for the Control Group. In contrast, Valium is the most frequently dispensed antianxiety drug among the Control Group at a rate of 120 per 1,000 persons. Valium is also frequently prescribed by PGP physicians to the Study Group but at a slightly lower rate of 96 per 1,000 persons.

The second most commonly prescribed antibiotic for the Control Group is Polycillin, a brand name penicillin, ranked tenth and prescribed at a rate of 53 per 1,000 persons (Table 16); however, Polycillin does not appear until rank number 176 and at a rate of 5 per 1,000 persons for the Study Group.

The second most common therapeutic category of drugs for both Study and Control Groups is analgesics. Darvon Compound is the most common analgesic used in the Control Group, 101 prescriptions dispensed per 1,000 persons whereas Empirin Compound and Darvon Compound are both commonly used among the Study Group. Thus, PGP physicians treating the Study Group show greater variability in the prescribing of analgesics than do the fee-for-service Medicaid physicians treating the Control Group.

There is little evidence that specific brand name drugs are more effective than their generic equivalents available in the United States. Drugs prescribed generically are usually less expensive than brand name drugs. Therefore, a higher proportion of generic prescriptions would reflect concern for the cost of drugs. However, as shown in Table 17B, there was virtually no difference between the Control Group and the Study Group in this regard. Only ten percent were generically prescribed for the Study Group and eight percent for the Control Group.

Another assessment of quality in prescribing drugs is the proportion of drugs prescribed which are "irrational" as defined by the American Medical Association's "Drug Evaluation," 1972. Irrational drugs are inappropriate mixtures of drugs, or drugs which are not recommended for the purposes for which they are usually prescribed. Of the fifty most frequently prescribed drugs, 26 percent of the Study Group and 22 percent of the Control Group prescriptions are "irrational" by this definition, indicating little if any difference in prescribing "quality". (See Table 17A)

To compare the rates of use of categories of prescribed drugs for both the Study Group and the Control Group with national rates for use for the top ten categories, some of the categories were collapsed to be consistent with available national data on prescription drug categories. As shown in Table 18, antibiotic use for the Control Group (12.3 percent) is almost identical with national rates (12.8 percent) and somewhat less for the Study Group (9.9 percent). The same is true for hormones, with the Control Group using a rate (10.4 percent) closer to the national rate (11.4 percent) and the

Study Group using a lower rate (7.7 percent). Both the Study Group and the Control Group are similar users of cardiovascular medicines and diuretics; these rates are higher than national rates but are probably consistent with the greater rates of hypertension in the District of Columbia as compared with the nation as a whole. Rates of ataraxics, analgesics, and antispasmodics are similar among the three groups. Sedatives-hypnotics and vitamins are prescribed at similar rates for both the Study Group and the Control Group but both rates are lower than national rates.

Despite the differences noted above, these drug therapeutic category rates suggest that the physicians prescribing for the Study Group and the Control Group are neither very dissimilar from each other nor from the physicians in the national sample.

To sum up, drug prescription rates for the Study Group of 1,000 Medicaid patients enrolled for 22 months in a prepaid group practice (PGP) when compared with the rates for the Control Group (Medicaid fee-for-service universe of 196,000), were consistently lower, indicating that PGP physicians prescribed fewer drugs in general. The rank ordering of drugs by frequency of therapeutic category was very similar for the PGP Study Group as compared to the Control Group.

PGP physicians appeared to use a narrower spectrum of drugs than physicians in the Medicaid fee-for-service universe. Over

90 percent of drugs prescribed by PGP physicians were represented by 125 drug items, in contrast to 147 items for the larger Medicaid universe.

Further analysis of the prescriptions to determine "quality" was not possible, due to the fact that both the Study Group and the Control Group prescriptions carried no diagnosis data.

Generically prescribed drugs are usually less expensive than brand name drugs. Using the rate of prescription of generic drugs as a yardstick, Study and Control Group rates of prescription of generic drugs showed little difference, 10 percent for the PGP Study Group versus 8 percent for the Control Group.

4-5 Discussion of Utilization Rates of Four Services

Data in four major areas of utilization: ambulatory physician encounters, drug prescriptions, hospital admissions and hospital patient days for the same 781 persons show significant decreases after enrollment into a PGP. As was the pattern in previous studies of this nature, the most striking decreases in utilization after enrollment in the PGP are apparent in the hospital admissions which showed an overall decrease of 30 percent which, when examined by service category (diagnostic grouping) shows no change in the obstetrical category but very significant reductions of 46 percent and 57 percent respectively in the surgical and medical admissions categories.

Hospital patient days were also considerably reduced (by 32 percent) after enrollment despite the slightly longer length of stay, 5.53 versus 5.44 days per admission. Hospitalization did not generally occur in the same hospitals during the before and after periods, due to the difference in admitting patterns of the PGP salaried physicians (after) as compared to the fee-for-service physicians (before). PGP physicians generally used the larger private teaching hospitals while the fee-for-service physicians who attended on the Study Group before enrollment admitted their patients to a large public hospital (D.C. General) and to the non-teaching hospitals.

The lower hospitalization rate in the after period cannot be explained by the use of nursing homes as a substitute for the hospitals, because there were no admissions to nursing homes, or any other long-term care institution, from the age group (1-64) during the 22 months under study.

The drop in the hospitalization rate of the disabled members of the Study Group, after enrollment in the PGP is very pronounced, down from 2,242 days per 1,000 persons per year to 856 days per 1,000 persons per year. A look at long term care for the same group shows only one admission in 22 months from the disabled group in the after period, versus none in the before.

While the average length of stay for obstetrical cases was slightly reduced after enrollment from 3.9 days to 3.3 days per admission, the length of stay for surgical cases went up from 5.5 days to 6.7 and was greatest for medical cases, up from 7.6 to 9.9 days per admission. While the increases could be related to different hospital practices, and/or different physician patterns in discharging patients, it could also reflect differences in the severity of the patients' conditions, since it could be argued that the PGP with its generally lower admission rates would admit only sicker patients who would then stay longer.

Comparison of drug prescription rates clearly indicates differences in the prescribing patterns of the physicians caring for the two groups. PGP physicians prescribed fewer drugs in general. Whether these differences are associated uniquely with physician prescribing patterns (references 19, 20, and 32 thru 38) or has to do with the way the delivery of medical care is organized cannot be determined at this point.

The difference in the rates of ambulatory physician encounters indicates a slight increase in utilization by children aged 1-4 and by teenagers 15-19. This could well mark a shift in attention to children and away from female adults in the childbearing age. For the latter category, physician visits are reduced by one-half, a feature which could be explained by the accessibility factor. The PGP facility which served most of the Study Group at that time did not have a gynecological clinic and women had to travel downtown for such a service. Transportation, however, was provided free of charge.

Chapter V

EVALUATION OF THE COSTS OF MEDICAL CARE

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CHAPTER V

EVALUATION OF THE COSTS OF MEDICAL CARE

5-1 Study Objectives

This section aims at:

- Comparing annual per capita dollar costs of medical care for the Study Group enrolled in a prepaid plan with the Medicaid fee-for-service universe, and accounting for the difference;
- Comparing annual per capita dollar costs from one year to another for the same Study Group.

5-2 Cost Data

Cost data for the Medicaid fee-for-service universe were obtained from provider billings which were maintained on magnetic tape. (See Section 3-7, on the D.C. Fee-for-Service Medicaid System, page 26). Cost data on the PGP were derived from figures provided in the PGP annual membership reports for the calendar years 1972 and 1973. Cost data on the Study Group of Medicaid enrollees in the PGP was obtained not only from the above mentioned PGP annual membership reports, but also from the cost data provided by the PGP to the Department of Human Resources, D.C. Government, (which administers the Medicaid program) prior to the renewal of each year's contract for the Study Group. In addition, a ledger was maintained of all hospital, nursing home, and other payments made by the PGP on behalf of the enrolled Study Group.

5-3 Per Capita Costs for the D.C. Medicaid Universe, and the Study Group

The payments to providers in the D.C. Medicaid program have escalated from $13.7 million in CY 1969 to $93.1 million in FY

1975; that is, a seven-fold increase over six years. During the same period not only did the number of recipients of Medicaid benefits double from 66,251 to 149,817 (as shown in Figure 4 on page F-4), but also the cost per recipient tripled from $208 per year to $621 per year (excluding administrative costs). Thus a doubling of the number of recipients and a tripling in the cost per recipient resulted in a six-fold increase in the expenditures per recipient in the D.C. Medicaid program over six years.

The monthly count of Medicaid eligibles is shown on Table 52 and plotted in Figure 5 on page F-5. It is the basis for computing the annualized population at risk. The rise in costs per annualized person* at risk in the D.C. Medicaid Universe is plotted in Figure 6, page F-6. The cost per annualized person at risk in the fee-for-service universe is useful for comparison with the capitation rates in the prepaid group practice (PGP). From $312 in CY 1970, it rose to $456 per capita in FY 1974. How these costs were computed is shown in Table 53 page T-54.

In contrast to the rising costs of the D.C. Medicaid Universe, the costs per annualized person in the Study Group enrolled in the PGP did not increase over three years (as shown in Figure 7). As a matter of fact, they decreased from

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* One annualized person = one person-year.

$282 in 1972 to $232 in 1973.

Members of the Study Group enrolled with PGP received a comprehensive benefit package including dental benefits, outreach benefits, free transportation, and prosthetics. These four items were over and above what is usually provided by the D.C. Medicaid Plan. If we include these four additional items then, as the detailed costs in Table 19 (page T-20) indicate, the per capita costs are $342, $289 and $358, respectively, for 1972, 1973 and 1974, with an average saving of 21 percent, when compared to the D.C. Medicaid Universe per capita costs for the same three-year period, despite the four additional benefits.

However, for purposes of comparison with the D.C. Medicaid fee-for-service universe, and to equalize benefit structures, the cost of these additional items has been subtracted, and if this is done, the per capita costs are $282, $232, and $286, respectively, for 1972, 1973 and 1974.

Table 20 (page T-21) summarizes the comparison of costs of the D.C. Medicaid Universe and the Study Group. The annual savings for the Study Group, when compared to the D.C. Medicaid Universe, were 24.4 percent, 47 percent, and 38.5 percent respectively for the years 1972, 1973 and 1974, yield an average of 37.2 percent savings over the three-year period.

5-4 Analysis and Discussion of Reduced Costs of the Study Group

The reduced costs of the Study Group enrolled in the PGP when compared to the Medicaid fee-for-service universe could be attributed, theoretically, to any of the following four independent variables characterizing the population mix:

- Difference in distribution by program category
- Difference in distribution by basis of eligibility
- Difference in distribution by age groups
- Difference in distribution by sex

Table 21 compares the D.C. Medicaid Universe with the Study Group by each of the four above mentioned factors. There is no significant difference between the two populations when examined by program category, age group, or sex, but there is some difference when examined by basis of eligibility. The Study Group has only 33.4 percent medically indigent enrollees compared to the Medicaid Universe's 41 percent. Table 22 shows that the rate of utilization of services by the medically indigent is 63 percent higher, dollarwise, than that of the categorically indigent. These two factors when put together would allow only for a 4.4 percent higher cost for the Medicaid fee-for-service universe, which might account for a small portion of the 37 percent savings reported earlier on page 55 but does not account for all of it. We now proceed to examine other governing factors.

The pronounced decrease in utilization for the Study Group described briefly in Section 2-4, is for the same group of individuals, transferred from a fee-for-service to a prepaid system. So it would appear that it is the prepaid system itself that reduced utilization, and consequently reduced corresponding costs. This is based on the assumption that the unit cost of a given service is the same in both systems, fee-for-service and prepaid. That unit costs are the same is evidenced by two facts:

- Both PGP and D.C. Medicaid use the same D.C. city hospitals and are charged the same per diem rates.
- Unit costs of services as provided by the PGP (see Table 23, page T-24) are substantially the same as those set by Medicaid under the D.C. Relative Value Scale.

The cost savings of the Study Group therefore is attributable to a decreased utilization of services and particularly, to a diminution in hospital utilization, from 1,002 acute hospital days per 1,000 persons per year for the D.C. Medicaid Universe to an average of 687 days per 1,000 persons in the Study Group. Since the per diem cost in city hospitals is about $150 a day, a reduction from 1,002 to 687 hospital days results in a savings of (315 x 150) = $47,250 per 1,000 persons per year enrolled in the Study Group. These are substantial savings!

A further comparison of the breakdown of costs between major service categories is also interesting. Table 24 (page T-25) shows that while over 50 cents of the D.C. Medicaid dollar goes to pay hospital costs, only 35 to 39 cents of every dollar paid for the Study Group is spent for hospital costs.

5-5 Examination of the Study Group Costs from Year to Year vis a vis the Annual Premium Charged by the PGP

Table 25 (page T-26) shows that the annual cost for the basic benefit package per participant in the Study Group enrolled in a prepaid group practice was $282, $232 and $286 in 1972, 1973 and 1974, respectively. This is remarkable in light of rising per diem hospital costs which increased in city hospitals from five to ten percent annually during those years. In contrast, D.C. Medicaid Universe costs climbed steadily from $373 to $435 to $465 over the same three-year period, and for the same benefit package.

For the comprehensive benefit package (all items shown in Table 25 including dental benefits, outreach, transportation, prosthetics and nursing home services) the per capita costs for the Study Group were $342, $289 and $358 for 1972, 1973 and 1974 respectively. Again, there is no significant increase in costs over a three-year period.

The first year's premium for the Study Group with the comprehensive benefit package (except outreach, transportation and prosthetics) was $29.17. At the end of the year the per capita cost turned out to be $28.47, and there was a net gain of $13,841.

Since the PGP is a non-profit cooperative organization, owned by its members, the gain of $13,841 was returned to the D.C. Government and the premium for the second year was reduced to $28.66, while the benefits were further increased to include transportation and outreach. At the end of the second year the per capita costs turned out to be still lower at $24.10. This could very well be explained by the stabilization and leveling off of the Study Group's utilization.

With a cumulative gain of $66,241 over two years, the PGP in the third year again turned the excess money back, reduced the premiums even further to $22.00, despite inflationary pressures in the costs of medical care, and added even one more benefit, prosthetic devices. The third year costs rose sharply to $29.85, and a cumulative loss of $23,324 was registered. The loss was mainly due to three things:

- Increase in dental costs by about 20 percent, from $53,000 to $63,000. Whether this was due to an increase in the total number of dental services or an increase in the unit cost per service cannot be decided from the data that is available.

- A small increase (five percent) in the number of hospital admissions, from 98 to 103 (about five episodes) but a much larger increase (36 percent) in the number of hospital days, from 580 to 786, can be seen. The rise can be attributed to increased hospitalization (longer LOS) in the age group (20-24) and the disabled. The corresponding increase in hospital costs was also about 36 percent.

- The premium was unrealistically low and completely disregarded inflationary pressures in the hospitals.

In the fourth year, the contract for the Study Group was terminated. It is reported that the PGP attempted to negotiate a monthly premium of $45 per person for the Study Group, which represented a steep increase of 106 percent over the previous year's premium of $22.

5-6 Summary

In summary for the same benefit package, annual prepaid costs for Medicaid enrollees for FY 1972, 1973 and 1974 were only $282, $232 and $286 respectively, reflecting a sizable 37 percent savings when compared to Medicaid fee-for-service costs over the same three-year period. (Alternatively, Medicaid fee-for-service costs were 59 percent higher than comparable prepaid costs)

Even with a more comprehensive benefit package (including dental care) than that provided by the D.C. Medicaid Plan under Title XIX, prepaid costs for the Study Group were only $342, $289, and $373 respectively for FY 1972, 1973, 1974, reflecting an average savings of 21 percent over the three year period.

The hospital utilization rates of the Study Group enrolled in the PGP are 40 percent lower than the Medicaid fee-for-service universe.

These findings provide solid support for the hypothesis that aggregate utilization of the D.C. Medicaid program can be reduced by substantial margins (with consequent savings in cost) through voluntary enrollment of Medicaid patients in prepaid group practices.

Chapter VI

SURVEY OF PATIENTS

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CHAPTER VI

SURVEY OF PATIENTS

6-1 Survey Objectives

The survey of patients had two main objectives:

- To determine whether the PGP delivery system is as adequate from the patient's point-of-view, as the fee-for-service Medicaid system, and
- To collect information that could not be obtained from the record data, such as the use of out-of-plan services and the adequacy of preventive health services.

The survey was conducted when most of the Study Group had been enrolled in the PGP for less than a year. The survey was done at that time to ascertain whether the experiment was successful enough to warrant refunding for another year. A later survey was planned to make the final judgment as to whether the PGP delivery system was as adequate from the patient's point-of-view as the fee-for-service Medicaid system.

6-2 Methodology

The survey, conducted during the summer of 1972, involved personal interviews with both a Study Group of PGP enrollees and a matched Control Group of Medicaid eligibles in the traditional fee-for-services system.

The Study Group of PGP enrollees consisted of 814 individuals* in 270 families. These individuals met the following conditions:

- They had been enrolled in the PGP for at least six months;

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* These 814 individuals were from among the 934 persons referred to as the Study Group in Chapter IV.

- Prior to enrollment in the PGP, they had been Medicaid recipients for at least one year;
- They could be located, and agreed to an interview.

The 814 people interviewed represent 92 percent of the individuals who met the first two of the above mentioned conditions.

The Control Group for the survey consisted of those members of the Medicaid fee-for-service universe who matched the 814 members of the Study Group by age, sex, family size, program category, and basis of eligibility. Because of the geographic mobility of the Control Group, it was impossible to locate some families. In such cases, other families were substituted from a computer listing of possible matches. Rematching continued until each family in the Study Group was matched as closely as possible by a family in the Control Group. (Tables 26 and 27)

One member of each family, usually the person who knew the most about the health situation and experiences of the entire family, answered the questions for herself (himself) and the family. Personal opinion questions were asked about the family as an entity. Data about individual illnesses and experiences were gathered on each individual rather than on the family as a whole.

There was one methodological problem in the study which should be pointed out; namely, self-selection of the Study Group. The use of self-selection rather than random selection in choosing the Study Group allowed a possible bias to enter the study. This will be discussed in Section 6-9.

6-3 Survey Results

The following discussion summarizes the results of the survey with regard to accessibility of care, preventive care for children and adults, prenatal care, dental services, the use of out-of-plan services, and satisfaction with care.

6-4 Accessibility of Care

According to the survey results, the accessibility of care to the patient was superior in the PGP to the accessibility of care through the fee-for-service Medicaid system.

It took the Study Group about the same amount of travel time as the Control Group to get to the doctor's office (Table 28). Fewer members of the Study Group were able to walk to the doctor's office, however, probably because they had to travel greater distances (Table 29). The greater distances were necessitated by the Study Group's use of a single centrally-located clinic rather than using private doctors with nearby offices as the Control Group was able to do.

The Study Group had to wait a shorter period of time before being able to get a doctor's appointment (Table 30). Once at the doctor's office, the Study Group waited a shorter period of time before seeing the doctor (Table 31). In general, 67 percent of the Study Group thought it was easier to see a PGP doctor than it had been to see a doctor through fee-for-service Medicaid. Only 7 percent thought it was more difficult.

6-5 Preventive Health Services

One of the primary goals of a prepaid group practice is to provide preventive health services in order to keep people well instead of waiting until they get sick to give them health services. The survey contained some questions on how many people were being reached by preventive health services.

Table 32 shows the percent of people six years of age and older who had received a routine physical examination or certain basic health tests during the six months prior to the survey. A significantly higher percent of the Study Group received each preventive health test, except for pap smears and breast examinations. Sixty-three percent of the Study Group as opposed to 40 percent of the Control Group received routine physical examinations during the six-month period.

These data are predictable because of the fact that the PGP encouraged everyone in the Study Group to have a routine examination at the time of enrollment to assess individual health needs. Apparently 63 percent of the Study Group who were six years of age or older had taken advantage of the offer by the time of the survey. At the time they received the physical examination, these people probably had received most of the preventive health tests mentioned.

Table 33 lists the percent of children under six years who had ever received basic immunizations. The data indicate that a significantly higher percent of the Control Group children received at least some immunizations during the first six months of life. These data need some qualification, however. The Study Group had been enrolled in the PGP for less than a year but were being asked about preventive care ever received. Up until the time of enrollment in the PGP, Study Group children should have been receiving care similar to the care that was still being received by Control Group children; i.e., care through the fee-for-service Medicaid system or the District of Columbia public health clinics. Therefore, one would predict that if there were any differences in the care received it would be in favor of the Study Group because they were encouraged to have an examination at the time of enrollment in the PGP. The data are at odds with this prediction. A slightly smaller proportion of the Study Group children had received routine physical examinations during the six-month period, although the difference was not statistically significant.

There are several possible explanations. Interviewing of the Study Group was done early in the summer. It is possible that more Control Group children than Study Group children had received their pre-school physicals at the time of the interview. Another possible explanation is that there may have been some confusion about the questions on the part of the Study Group because most of the other questions had applied only to care received since enrollment in the PGP while these questions applied to care ever received.

In summary, data on preventive health care for children and adults were inconclusive. Due to the short period of enrollment, Study Group data were invalidated by mixing pre-PGP experience with PGP experience.

6-6 Prenatal Care

All women 11-49 years were asked a series of questions about any pregnancies they had experienced since January of 1971; that is, during approximately an 18-month time period. Since the Study Group had been enrolled in the PGP for only about nine months at the time of the interview, at least part of the care received for most pregnancies had been received outside of the PGP. Forty-two percent of the pregnant women had received no prenatal care at all from the PGP.

Study Group women reported 52 pregnancies while Control Group women reported only 39 pregnancies. Four Study Group women and two Control Group women reported two pregnancies each during the 18-month period. The fact that the Study Group reported 13 more pregnancies than the Control Group is surprising since the Control Group was interviewed after the Study Group, and, consequently, was being asked to report pregnancies that had occurred during a slightly longer time period than 18 months. The difference in the number of pregnancies, however, was not significant at the .05 level. (See Table 34) The median age of pregnant women in both groups was about 21 years.

Both groups reported the same number of normal births. (See Table 35) The Study Group reported more births with complications, still births, abortions or miscarriages, and current pregnancies. These differences were not statistically significant.

A somewhat larger percentage of Control Group women visited a doctor during the first trimester of pregnancy. (See Table 36) By the end of the second trimester, however, 90 percent of the women in both groups had seen a doctor for prenatal care. A small percentage in both groups received no prenatal care (two percent) or received prenatal care only during the third trimester (four percent). These data compare favorably to the national figure of almost 20 percent of pregnant women not seeing a doctor until the third trimester of pregnancy.[48]

Once they began seeing a doctor for prenatal care, a larger percentage of the Control Group, 100 percent versus 88 percent of the Study Group, saw a doctor at least monthly (p-value = .05). A larger percentage of the Control Group, 100 percent versus 76 percent of the Study Group, had a six-week check-up after a full-term pregnancy (p-value = .01). Eighty percent of the women in both groups were hospitalized at the time of the birth, miscarriage, or abortion.

Two women in the Study Group, who had received at least some of their care from the PGP, reported that they were dissatisfied with the care they had received. No dissatisfaction was reported by the Control Group. It is probable that some women were forced to change doctors during their pregnancies because of enrollment in the PGP. A change of doctors could lead to poorer care and dissatisfaction on the part of the patient. This may account for the slightly poorer care the Study Group reported with regard to the timing of the first doctor visit, the frequency of visits, and six-week check-ups after delivery.

The data on prenatal care are of limited value. The period of enrollment in the PGP, due to the very nature of pregnancy, was too short to allow for collection of valid comparable data. When the time framework was extended to 18 months, it resulted in data which mixed PGP experience with fee-for-service Medicaid experience.

6-7 Dental Services

No free dental services were provided through the fee-for-service Medicaid program at the time of the survey. Dental services were included in the package of services offered by the PGP as an inducement to join the experimental program. The PGP provided the Study Group with all dental services except braces and dentures which were excluded because of the high cost of these items.

Fifty-nine percent of the Study Group as opposed to 24 percent of the Control Group saw a dentist at least once during the six-month period. (See Table 37) The Study Group made an average of 1.46 visits per person to the dentist during the six-month period while the Control Group made an average of only .47 visits per person. (See Table 38) Of those who did visit a dentist at least once during the six-month period, the average number of dental visits was 2.5 for the Study Group and 1.9 for the Control Group. In general, a wider segment of the Study Group than the Control Group used dental services, and those that sought dental services used them more frequently.

There are several reasons for the Study Group's high utilization rate for dental services. The Study Group probably had a backlog of dental problems because no free dental services had been provided for them while they were receiving medical care from the fee-for-service Medicaid program. Many people, in fact, joined the PGP to take advantage of the free dental care. Another factor was the PGP's policy of encouraging a routine dental check-up complete with X-ray and cleaning every six months. These routine check-ups no doubt often uncovered problems that required further dental visits to correct them.

The types of service received by the Study Group and the Control Group were proportionately quite similar. (See Table 39)

The Control Group reported a slightly higher percentage of extractions while the Study Group reported a slightly higher percentage of fillings. This could indicate that the Study Group was receiving earlier remedial care than the Control Group.

Ninety-nine percent of those who saw a PGP dentist were satisfied with the care received. Ninety-two percent of the Control Group members who saw a dentist were satisfied with the care received. (See Table 40)

Respondents in both the Study Group and the Control Group were asked if anyone in their families had "a dental problem which has not been taken care of yet?" More people in the Study Group reported such problems, 129 individuals in the Study Group versus 119 individuals in the Control Group. There were, however, about the same number of untreated dental problems in both Groups, 129 in the Study Group and 130 in the Control Group, because 11 people in the Control Group reported two problems each.

Forty-eight percent of the untreated dental problems reported by the Study Group were services that are not covered by the PGP - new dentures, replacement dentures, braces, broken tooth repairs. Only 22 percent of the untreated dental problems reported by the Control Group were for these services. The Control Group reported, instead, a need for preventive services such as cleaning and check-ups which the Study Group had already received from the PGP. It seems reasonable to assume that the Control Group potentially had the same need for these expensive services as the Study Group. However, the Control Group reported less than half as many untreated dental problems of this nature. Probably the Control Group members did not know that they needed these services because they had not seen a dentist recently.

This hypothesis is supported by the data. Half of the untreated dental problems of the Study Group occurred among people who had seen a dentist during the last six months, while most of the Control Group problems occurred among people who had not seen a dentist recently. This may explain the different nature of the types of untreated dental problems reported. The Study Group had gone to the dentist recently for preventive care. In the course of the examinations, the dentists had alerted them to dental problems they had that were not covered by the PGP. The Control Group, on the other hand, had not been to the dentist recently and felt that they needed preventive care. If they had gone to the dentist, they too would probably have found out they needed more care.

The reasons given for not having had the dental problem remedied were similar for both Groups. The largest number of reasons for both the Study Group and Control Group centered around the lack of money to pay for services that are not covered either by the PGP or by fee-for-service Medicaid. Logically, the Control Group could have given this as the reason for all their untreated dental problems because no dental service was provided by the Medicaid fee-for-service system. The other reasons given are similar for both Groups - poor health, fear, lack of time, or currently waiting for an appointment.

In summary, the free dental care was a resounding success with the Study Group, as would be expected since they had received no free dental care under fee-for-service Medicaid. Study Group utilization of dental services was higher than the national average due to the backlog of dental care resulting from the lack of previous care. Control Group utilization of dental care remained at a rate lower than the national average. A greater percentage of the Study Group members who received dental care were satisfied with that care than Control Group members who received dental care.

6-8 Out-of-Plan Service

The survey gathered information on the number, type, and cost of services purchased out-of-plan as well as the reasons why individuals felt the need to purchase such services. No attempt was made in this survey to find out how many free services provided by public health clinics were used by either Group.

The Study Group reported 64 out-of-plan services during FY 1972, while the Control Group reported 82 out-of-plan services for the same period. The reported use of out-of-plan services was extremely low for both the Study Group and the Control Group when compared to almost 12,000 within-plan services, excluding laboratory services, received by the Study Group during the same period.

Table 41 lists out-of-plan services by size of payment. The median size of out-of-plan payments made by the Study Group was $8.60. The median size of out-of-plan payments made by the Control Group was $17.00. The difference in the dollar amounts spent by the Study Group and the Control Group is significant at the .01 level. Most of the Study Group payments (58 percent) were under $10. Most of the Control Group payments (56 percent) were $10-99. The Study Group reported three more large payments of $100-499 than did the Control Group. These latter payments were investigated individually to determine the reason for such large expenditures. Of the five Study Group large payments, two were made either because the service was not covered by the PGP or the person thought the service was not covered. The other three large Study Group payments were made in order to use the services of a family doctor to which the person was accustomed. The reason given for both Control Group large payments was "to get more convenient and accessible health care." In other words, in both the Study Group and the Control

Group these large out-of-plan expenditures were made mainly to obtain care from sources that were more convenient and familiar.

Both Groups reported relatively large numbers of prescriptions purchased out-of-plan. Prescriptions made up over half (58 percent) of out-of-plan services for the Study Group. This accounts for the large number of payments under $10 reported by the Study Group. The reason given for these payments was the need for medicines on Sundays and evenings when the PGP pharmacy was closed.

The seven Study Group and 16 Control Group dental purchases were understandable since no dental services were provided by Medicaid and some were not provided by the PGP. Doctor visits and hospital and nursing home stays were more difficult to explain since most of these types of services were covered by both plans.

The most frequently cited reason for Control Group out-of-plan services was that the person was between Medicaid cards. Due to the lengthy processing time required to reestablish eligibility every six months, some families did not have valid Medicaid cards in their possession at all times. Seventy-one of the 270 respondents stated that they had not been continuously covered by Medicaid, although the Medicaid computer indicated continuous coverage.* The most frequently cited reason for Study Group payments, as mentioned before, was the need for after-hours prescriptions.

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* It is known that eligibility records on the computer were sometime made continuous retroactively.

Both Groups reported a sizable number of payments, 14 for the Study Group and 15 for the Control Group, for services that were not covered, or they thought were not covered, by their respective plans. As mentioned before, the data indicate some confusion among both Study and Control Groups as to knowledge concerning which services are covered by the two plans.

There were a number of other reasons cited by each group for out-of-plan services. The Study Group reasons indicated an attempt to get care that was more convenient, more familiar, and which was believed to be of better quality. The Control Group reported a sizable number of out-of-plan payments, 24, because of the difficulty of finding conveniently located providers that would accept their Medicaid cards.

There is a good possibility that these data underreport the volume of out-of-plan services. More research in this area is needed. Knowledge about use of out-of-plan services, whether free or paid for, is important in assessing the success of a health plan. Studies show that utilization of out-of-plan services is related to (1) dissatisfaction with within-plan services and (2) confidence in prior doctors.[49] Consequently, use of out-of-plan services is a good indicator of how well people have been assimilated into a PGP.

6-9 Satisfaction with Care

One of the major objectives of the questionnaire was to find out how satisfied Medicaid recipients were with the medical services received from the PGP as opposed to services received from fee-for-service Medicaid providers. A number of different questions on satisfaction were asked of each of the respondents.

A significantly larger number of the Study Group felt that the PGP nurses were friendly and the laboratory personnel were efficient and courteous than did members of the Control Group. The reaction of the Study Group to their treatment from PGP doctors, however, was significantly less favorable on almost every count than the reaction of the Control Group to their doctors. The Study Group felt that the doctors did not take a personal interest in their health, did not explain their illnesses to them in simple, non-medical terms, and did not put them at ease or treat them with respect.

Both Groups were asked what they particularly liked or disliked about their health care. The Study Group was vocal, giving more responses to questions than the Control Group. (See Table 42) Convenience was a reason given by 66 percent of the 270 Study Group respondents. Personalized service, the dental program, and quality of care were the other most frequent responses.

The Control Group gave a very different set of responses. Fifty-six percent of the 270 respondents said they liked the Medicaid program because it was free. Another 25 percent said they liked nothing in particular. These two reasons account for 68 percent of all reasons given by the Control Group, but neither of these reasons demonstrates very positive feelings about the care received from fee-for-service Medicaid. It is interesting to note that none of the Study Group said they liked the care at the PGP because it was free, although it was as free to them as Medicaid care was to the Control Group. Apparently, the Study Group had gone beyond being satisfied with health care just because it was free to expecting things such as quality and convenience.

There seem to be no essential differences between the reasons given for disliking the PGP and those given for disliking Medicaid. (See Table 43) Both the Study Group and the Control Group seemed reluctant to make substantive criticisms of their health care. More than half of each Group said they "disliked nothing."

Comparing the reasons for joining the PGP with the comparable things liked about the PGP, it would seem that the PGP was living up to the expectations of the Study Group. A greater percentage said they liked the convenience than said they joined because of convenience. A greater percentage liked the personalized service than expected personalized service. About the same percentage expected quality of care as obtained quality of care.

Each Study Group respondent was asked the following question: "Considering the number of visits you and your family have made to doctors at the PGP, how satisfied are you with the care received?" Control Group respondents were asked the same question about the care received from doctors under the fee-for-service Medicaid program.

As was true of other studies of this kind where general questions on satisfaction with medical care were asked, the vast majority of both the Study Group and the Control Group respondents said they were satisfied or very satisfied.[50] (See Table 44) Eighty-nine percent of the Study Group as opposed to 96 percent of the Control Group were satisfied or very satisfied. This difference is statistically significant at the .01 level. An interesting fact to note from the data on Table 44 is the tendency of the Study Group to give the more extreme answers of "very satisfied" and "very dissatisfied" while the Control Group merely reported being "satisfied" or "dissatisfied."

Study Group respondents were asked the question: "How would you compare the health care you and your family received at the PGP with that you received in the Medicaid program?" Of the 270 respondents, 54 percent thought PGP care was better than fee-for-service Medicaid care. (See Table 45) Only 7 percent thought PGP care was worse than Medicaid care.

The data on patient satisfaction did not allow any clearcut statement that one group was overwhelmingly more satisfied with their health care than the other group. The vast majority of both Groups said they were satisfied with their health care. The number who said they were satisfied with care received from fee-for-service Medicaid is significantly higher than the number who said they were satisfied with the PGP. Inconsistent with this, however, was the fact that 54 percent of the Study Group said that the PGP gave better care than Medicaid. And the Study Group was in a position to know because they had experienced both forms of health care. In the face of these inconsistent data, it was necessary to look for underlying factors to explain the inconsistencies.

One possible explanation was that the two Groups were somehow different, although they had been matched by obvious characteristics such as age, sex, family size, program category, and basis of eligibility. This was indeed possible because self-selection rather than random selection was used in selecting the Study Group. Letters were mailed out to all Medicaid eligible in the District of Columbia Service Area 7 inviting them to join the PGP. Those who responded positively and met the enrollment qualifications became members of the Study Group. The Control Group was selected from among those Medicaid eligibles who either failed to respond or who responded negatively to the invitation. Obviously, this method of selection could result in differences in the final Groups.

In this case people who elected to join the PGP could logically have been more dissatisfied with Medicaid than those who did not join. This hypothesis is supported by a study done in connection with the East Baltimore Health Care Plan.[51] This study was done at the time of enrollment to determine which factors motivated people to change to a new form of health care. The study found that dissatisfaction with existing health care was a major factor leading to enrollment in a new plan. Another finding relevant to our study is the fact that dissatisfaction with present care leads to the expectation that a new form of health care will be better.

Unfortunately, our survey did not contain a question about how satisfied the Study Group had been with fee-for-service Medicaid before they enrolled in the PGP. The results of such a question would probably not have been very reliable anyway because it would have asked the Study Group to recall how they had felt six months to a year earlier. However, it does not seem unreasonable to assume that the Study Group, because of the self-selection process, was biased toward being people who were previously dissatisfied with fee-for-service Medicaid and, therefore, chose to try out a new form of health care.

Also, based on the experience of the East Baltimore study, one would suspect that the Study Group expected better care from the PGP than they had been getting from Medicaid. Some of the data from our survey is consistent with this line of reasoning. For instance, the Study Group expected more from their health care than that it be free. The search for a higher level of quality may account for the lower percentage of the Study Group who are satisfied with their care. People who expect a lot are more likely to be disappointed by reality than other people.

There are also some clues in the data that indicate that the Study Group was a more opinionated and aggressive group than the Control Group. They tended to give more extreme answers when asked to choose from a continuum of possible answers. They gave more responses to open-ended questions. This is consistent with the fact that it required personal initiative on the part of each family in the Study Group to respond to the invitational letter and to go through the enrollment process. Hence, inherent differences between the two Groups may account for some of the differences between, and the inconsistencies in, the data supplied by the survey.

One thing that cannot be overlooked, however, is the evidence that points to less satisfaction with doctor encounters in the PGP. There are a number of possible reasons for the poorer doctor/patient relationship reported by the PGP enrollees. People look for two main things from their doctors, technical competence and personal interest. There is a tendency to perceive group practice doctors as technically competent but lacking in the personal interest people are looking for.[52]

Another possible reason is the fact that the Study Group was seeing doctors who were unfamiliar to them, while the Control Group was able to continue to see their regular doctors if they had any. Forty-one percent of the Control Group families said they had a family doctor or doctors. Certainly this type of disruption of the old doctor/patient relationship could have an effect on satisfaction. The Study Group was commenting on doctors they had been seeing for less than a year while the Control Group was commenting on doctors they may have been seeing for many years. Perhaps patient perception of PGP doctors would improve as the length of enrollment increased.

Finally, the Study Group's choice of doctors was limited. Only three doctors were available to the adult members of the Study Group at the clinic nearest their homes. To see other doctors, including specialists such as gynecologists, the Study Group had to travel to the main clinic located in the central city.

In summary, no clearcut statement can be made as to which group, the PGP enrollees or the fee-for-service Medicaid recipients, was more satisfied with its health care. The data collected by the survey had some inconsistencies on the subject of patient satisfaction. However, all things considered, the Study Group seemed to be at least as satisfied with their health care as the Control Group.

Chapter VII

SURVEY OF PATIENTS TERMINATED FROM THE PREPAID GROUP PRACTICE

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CHAPTER VII

SURVEY OF PATIENTS TERMINATED FROM THE PREPAID GROUP PRACTICE

7-1 Objective of the Termination Survey

The termination survey was designed to examine the causes which led to the termination of Study Group members from the prepaid group practice.

During the period July 1971 through February 1974 a total of 1,056 persons enrolled in the prepaid group practice. All were Medicaid recipients for whom regular eligibility redetermination was waived for the duration of their enrollment up to a maximum of three years but who had the option to disenroll at any time and return to the regular Medicaid rolls. During the same period of time, the PGP membership of 175 of these individuals in 77 families was terminated. A questionnaire was administered to the head of household (HOH) of each terminating family that could be located for interview. Whenever ex-enrollees could not be located directly by telephone or mail, attempts were made to locate them through the post office, the Medicaid files, or through neighbors. The interviews were held and questionnaires were completed in the respondents' homes. The results of these investigations were analyzed to discover reasons for termination from the PGP and factors affecting the decision to terminate.

7-2 Categories of Termination

The 1,056 persons enrolled in the PGP between July 1971 and February 1974 represent 2,516 person-years of enrollment. During this period, 175 terminations were reported. For the 32-month period mentioned above, the annual overall termination rate works out to 7 percent (70 terminations per 1,000 enrollees per year). The causes of termination are (broadly) voluntary and involuntary. (See Table 47 page T-48).

7-3 Involuntary Termination

Persons terminating for involuntary causes from the PGP include 27 who died. Fifteen of these were 65 years or older.

Twenty families (including 49 persons) moved out of the District, and thus lost their eligibility for D.C. Medicaid benefits. Termination was suggested by the PGP in two cases. In the first case a chronically-ill patient refused to be admitted to Glen Dale hospital although PGP physicians recommended the admission. In the second case, a mother of six children, refused blood transfusions because of her religious beliefs, and it was suggested by the PGP that she terminate her membership. Her six children, however, remained in the PGP. Several families (but no individuals) are counted more than once in Table 47 because different family members terminated PGP enrollment for different reasons. For instance, one family of six was removed when the mother took her own life and those of her three children aged 2, 11, and 15; her remaining two children, aged 10 and 13, were taken to live with relatives outside the city.

7-4 Voluntary Terminations

Those persons terminating for voluntary reasons are called "Dropouts". They consist of those who, when interviewed, gave as the reason for their termination at least some form of dissatisfaction, either with the convenience or accessibility of the PGP plan, or with some aspect of the delivery of medical services by PGP physicians or other PGP staff members. These Dropouts totaled 62 persons in 22 families, which results in an annual voluntary dropout rate of 2.5 percent. The Dropouts and their reasons for dropping out are the subject of more detailed analysis in the following section.

7-5 Reasons for Voluntary Termination

To reiterate the 62 persons classifed as Dropouts were those whose termination from the PGP was voluntary and whose 22 head-of-households (HOH) when interviewed expressed dissatisfaction with the delivery of medical services through the PGP plan.

The complaints expressed by these 22 HOH's were as follows. Nine were dissatisfied with physicians, while eleven mentioned the services. Three said both doctors and services were unsatisfactory. Ten expressed belief that the health care was of unsatisfactory quality, while twelve thought the health care to be of good quality but did not like the way it was administered. Ten thought the physicians too impersonal, and six expressed the belief that the physicians failed to relate to Blacks. Eleven respondents pointed to some form of inconvenience as a problem, such as the difficulty in getting an appointment, access to the clinic, or waiting time.

The 62 Dropouts were all among the first 986 participants enrolled in the PGP. These 986, comprising 342 families, all enrolled during the project's first six months. The early enrollees as a group formed a demographic cross-section of the Medicaid Universe (See Section 3-2). They represented a cross-section of the Medicaid universe by age, sex, program category, and basis of eligibility. Thus it is possible to examine the properties of a subgroup of those enrollees whose dissatisfaction was so great as to cause them to drop out of the PGP plan. We also may compare, from this original cohort of 986 enrollees, those who remained in the plan through February 1974, thus evidencing at least enough satisfaction to have remained in the plan. The result is that we may consider 819 persons, after taking into account several reinstatements and the fact that several terminations for involuntary reasons were by those joining after December 31, 1971 (the end of the first six months). In this section the characteristics of these two subgroups are examined to discover more of the differences in the nature of the 62 Dropouts and the 819 persons who remained in the PGP through February 1974, whom we shall call "Stays".

In Table 48 the numbers of each of the two subgroups, Dropouts and Stays, which fall into each sex and age (or disability) category are given. For comparison of the two groups the value of the X^2 test-statistic[54] is calculated to be 11.0, based on 9 degrees of freedom (d.f.), with a descriptive level of significance p=.27. This does not indicate any dissimilarity between the two groups by age, disability, and sex categories.

Table 49 (for Dropouts) and Table 50 (for Stays) record the number of persons by basis of eligibility, either as categorically indigent (CI) or as medically indigent, (MI) and also by numbers in each of five categories of family sizes, and five categories of ages of head-of-household (HOH). The cell numbers of persons of any one family size and given HOH age category are not themselves subdivided according to basis of eligibility. Thus two separate tests for statistical inference are made. For the family size-HOH age cell frequencies this gives X^2=42.8 (14 d.f.), which has descriptive level p=.0001, a highly significant result. We may conclude a strong relationship between dropping out of the PGP plan and larger family sizes with older HOH's.

Similarly, separate consideration of basis of eligibility is taken by using the total for each category, CI and MI, for each group. The statistical test is then $X^2=10.5$ (1 d.f.), corresponding to descriptive level $p=.0012$, another very significant result. Dropouts are seen to be strongly linked to the CI category, when compared to Stays.

The similarity of the last two results is not surprising since the age of the HOH, basis of eligibility, and family size are highly correlated on Medicaid eligibility rolls. Excluding one person families, where the household is usually a single elderly person, it is noted that as family size increases so also does age of HOH. Also, the larger families are preponderantly members of the categorically indigent (where Medicaid membership is automatic) rather than of the medically indigent. Eighty nine percent of the Dropouts are CI whereas only 62 percent of the Stays are CI.

All ages were calculated as of December 31, 1971. The median HOH age for Dropouts was then 43, and for the Stays 38. The average family of the Dropouts was 2.82, for the Stays 2.88.

Table 51 reports the numbers of persons (with the represented number of families in parentheses) for each of four equal periods of time describing the length of enrollment in the plan for all

Dropouts, by family size. For these tabulations of family size to length-of-stay, $X^2=9.5$ (6 d.f.) with descriptive level $p=.17$. This is not indicative of a link between family size and length of stay.

The statistical significance of the inference tests showing that dissatisfied Dropouts from the PGP plan are highly linked with larger families of the categorically indigent can be explained as follows. The categorically indigent (CI) are automatically eligible for Medicaid and whether they remain in the PGP or terminate from it to reenter the general Medicaid rolls, they are assured of free medical serivce. The medically indigent (MI) on the other hand have an unstable "on again/off again" eligibility depending on their medical status. If they leave the PGP, they lose the three-year automatic waiver of eligibility granted only to PGP enrollees, and return to the general Medicaid rolls, where their eligibility to free medical service is in constant jeopardy of being lost. This might account for the lower dropout rate among the CIs.

7-6 Conclusion

Over a 32-month period of PGP experience, though the overall annual dropout rate from the PGP was 7 percent, the annual voluntary dropout rate was 2.5 percent, which figure would seem to indicate a general satisfaction with the prepaid group practice plan.

Chapter VIII

EXECUTIVE SUMMARY

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CHAPTER VIII

EXECUTIVE SUMMARY

8-1 Study Objectives

The overall purpose of this study was to evaluate whether Medicaid patients enrolled in a PGP could receive health care of comparable quality but at costs lower than that for Medicaid patients receiving health services in the existing fee-for-service program.

Under the terms of an experimental contract between the District of Columbia Government and Group Health Association of Washington, D.C. (a prepaid group practice), the voluntary enrollment of 1,000 Medicaid recipients, representing a cross-section of the 196,000 individuals in the Medicaid Universe, was authorized in July of 1971. The D.C. Government paid the premiums.

Variables that were investigated under the two types of health delivery systems, prepaid and fee-for-service, were:

- The rates of utilization of medical services;
- The costs of medical care; and
- Patient satisfaction with medical services.

8-2 Rates of Utilization of Medical Services

Medical services utilization by the same 1,000 Medicaid patients was compared for 12 months, 18 months, and 22 months before and after enrollment in the prepaid group practice.

Significant and consistent decreases in all four categories of utilization (physician encounters, drug prescriptions, hospital admissions, and hospital days) were reported. Overall ambulatory physician encounter rates decreased 15 percent, drug utilization was down 18 percent, hospital admissions decreased 30 percent, and hospital days declined 32 percent after enrollment in the prepaid group practice (PGP).

Utilization of both prescription and over-the-counter drugs was studied in detail. Drug prescription rates for the Study Group of 1,000 Medicaid patients enrolled for 22 months in an PGP, when compared with the rates for the Medicaid fee-for-service universe, were consistently ten percent lower, indicating that PGP physicians prescribed fewer drugs in general. For both Study and Control Groups, rates were substantially higher for females than for males; and higher for the medically indigent than the categorically indigent.

The rank ordering of drugs by frequency of therapeutic category was very similar for the PGP Study Group as compared to the Medicaid Universe. PGP physicians appeared to use a narrower spectrum of drugs than physicians in the D.C. Medicaid Universe. Over 90 percent of drugs prescribed by PGP physicians were represented by 125 drug items, in contrast to 147 items for the larger Medicaid universe.

Antibiotic use in the Control Group (12.3 percent) was almost identical with national rates (12.8 percent) and somewhat higher than the Study Group rate (9.9 percent). The same was true for hormones with the Control population using a rate (10.4 percent) closer to the national rate (11.4 percent) and the Study Group using a lower rate (7.7 percent). Both Study and Control Groups were similar users of cardiovascular medicines and diuretics; these rates were higher than national rates, as would be expected due to the higher rates of hypertension in the District of Columbia as compared with the nation as a whole.

Of the 50 most frequently prescribed drugs, 13 of those prescribed for the Study Group, and 11 for the Control Group, were "irrational" according to AMA Drug Evaluation Standards, indicating little if any difference in prescribing "quality" between the two Groups.

Generic drugs are usually less expensive than brand name drugs. Using the rate of prescription of generic drugs as a yardstick to measure cost consciousness, Study and Control Group rates of prescription of generic drugs showed little difference. The Study Group registered 10 percent generic, versus 8 percent for the Control Group.

Further analysis of prescriptions to determine "quality" was not possible, due to the fact that both the Study and Control Group prescriptions carried no diagnosis data.

8-3 Costs of Medical Care

For the same benefit package, annual per capita prepaid costs for Medicaid enrollees for the FY 1972, 1973, and 1974 were only $282, $232, and $286 respectively, reflecting a sizable 37 percent savings when compared to Medicaid fee-for-service per capita costs over the same three-year period. Alternatively stated, Medicaid fee-for-service costs were 59 percent higher than comparable prepaid costs.

Even with a more comprehensive benefit package (including dental care) than that provided by the D.C. Medicaid Plan under Title XIX, prepaid costs for the Study Group were only $342, $289, and $373 respectively for FY 1972, 1973, and 1974, reflecting an average savings of 21 percent over the three-year period.

The chief reason for the reduced costs of the prepaid plan seems to have been the 40 percent lower hospital utilization rate of the Study Group when compared to the Medicaid fee-for-service universe.

8-4 Patient Satisfaction with Care

Medicaid patient satisfaction with care received under the two delivery systems was investigated using a survey instrument designed to collect data on the following variables from the Study Group of 1,000 Medicaid enrollees in the PGP, and a matched Control Group drawn from the Medicaid Universe:

- Overall patient satisfaction with medical services received
- Accessibility of care
- Use of dental services
- Use of preventive health services
- Out-of-plan utilization

Patient accessibility to medical care was better in the PGP in spite of restriction of care to only two outpatient medical facilities. Both the time spent waiting for a medical appointment and the time spent waiting in the doctor's office were shorter for the Study Group. Sixty-seven percent of the Study Group thought it was easier to see a doctor in the PGP than it had been through fee-for-service Medicaid while only 7 percent thought it was more difficult.

Data on preventive health services for children and adults and prenatal care were inconclusive due to the short length of enrollment at the time of the survey.

Out-of-plan utilization of medical care was relatively low for both Study and Control Groups when compared with the volume of within-plan utilization. There were a total of 64 out-of-pocket payments by Study Group families and 82 by Control Group families. The median out-of-pocket payment for the Study Group was $8.60; for the Control Group $17.00.

In general, the Study Group seemed at least as satisfied with care from the PGP as the Control Group was with care from fee-for-service Medicaid. Fifty-four percent of the Study Group said they were more satisfied with the care received from the PGP than they had been with care from fee-for-service Medicaid. Only seven percent were less satisfied.

A special termination survey was conducted on all families that "dropped out" of the prepaid plan. While the overall annual dropout rate over a 34-month period was seven percent, the annual voluntary dropout rate over the same 34-month period was only 2.5 percent. This low figure is indicative of the general acceptance of and satisfaction with the prepaid group practice delivery system by the Study Group.

8-5 Implications

These findings have important implications for national health care policy. They suggest substantial cost savings in the Medicaid program might be possible if large numbers of Title XIX eligibles are given the option to enroll voluntarily in prepaid group practices. Evidence in this report supports the view that savings as great as 37 percent might accrue to the D.C. Medicaid Program by allowing Medicaid patients in the District of Columbia to enroll in an established prepaid group practice. These savings would be due primarily to decreased hospital utilization.

Table 1
MEDICAID PER CAPITA COSTS PER YEAR*
DISTRICT OF COLUMBIA

Year	Number of Recipients(A)	Total Expenditures(E)	Per Capita Expenditures ** Per Recipient (E/A)
FY1970	93,661	$22,306,083	$238.16
FY1971	117,954	$36,012,034	$302.95
FY1972	130,966	$45,803,343	$334.57
FY1973	140,123	$63,084,595	$450.21
FY1974	141,482	$70,580,720	$498.87
FY1975	149,817	$93,100,836	$621.43

* Data taken from Form 2082/NCSS/HEW

** Based on payments to providers. Does not include administrative costs.

Table 2
D.C. Medicaid (FY 1972) Universe

Age Group	Medically Indigent *(A)				Categorically Indigent (B)				Universe (A & B)			
	M	F	T	%	M	F	T	%	M	F	T	%
LT 1	1,548	1,523	3,071	4	1,954	1,976	3,930	3	3,502	3,499	7,001	3
1 - 4	5,266	5,181	10,447	13	9,461	9,399	18,860	16	14,727	14,580	29,307	15
5 - 9	6,026	5,918	11,954	15	10,539	10,583	21,122	18	16,575	16,501	33,076	17
10 - 14	5,927	5,911	11,838	15	8,557	8,553	17,110	15	14,484	14,464	23,946	15
15 - 19	5,243	6,893	12,196	15	5,681	7,589	13,279	11	10,924	14,491	25,415	13
(1- 19)				62				63			121,745	60
20 - 24	1,199	5,098	6,297	8	820	7,983	8,758	8	2,019	13,036	15,055	3
25 - 34	206	4,593	4,799	6	590	9,105	9,695	8	796	13,698	14,494	7
35 - 44	230	3,009	3,239	4	551	4,534	5,085	5	781	7,543	8,324	4
45 - 54	191	1,745	1,936	2	411	1,914	2,325	2	602	3,659	4,261	2
55 - 64	143	745	888	1	162	576	738	1	305	1,321	1,626	1
(1- 64)				83				87			160,505	85
GT 64	3,571	7,093	10,664	13	1,286	3,171	4,457	4	4,857	10,264	15,139	8
B or D	1,462	1,577	3,039	4	4,995	5,610	10,605	9	6,457	7,187	13,644	7
Total	31,022	49,286	80,308	100	45,007	70,957	115,964	100	76,029	120,243	196,272	100

LT 1 = less than 1 year old
GT 64 = over 64 years old
B or D = blind or disabled

Females = 61%
Males = 39%

Table 3
D.C. Medicaid Study Group enrolled in a prepaid group practice

	Age Group	Males	Females	Total (Both Sexes)	Percent
	< 1	19	10	29	2
	1 - 4	56	67	123	13
	5 - 9	94	63	157	17
	10 - 14	78	82	160	17
	15 - 19	59	76	135	14
Sub.Tot.	(1 - 19)	287		575	62
	20 - 24	6	40	46	5
	25 - 34	0	65	65	7
	35 - 44	1	56	57	6
	45 - 54	3	28	31	3
	55 - 64	2	5	7	1
Sub.Tot.	(1 - 64)	299	482	781	84
	> 65	20	51	71	8
	B or D	23	30	53	6
	Total	361	573	934	100

Females	61%
Males	39%

Table 4

The District of Columbia Medicaid Universe

Total Number of Services, and Number of Services per 1000 Recipients (All Ages) by Type of Service[1] for Fiscal Years 1970, 1971 and 1972

Year	Unduplicated Count of Recipients of Services (All Ages)	Total Number of Services			
		Hospital Discharges	Total Days of Hospital Care[2]	Visits to Private Physicians (Office, Home, In-Hospital)	Drugs
FY 1972	130,966	33,628	303,094	423,248	811,721
FY 1971	117,954	26,042	236,563	343,649	634,885
FY 1970	93,661	18,718	191,200	170,702	403,699

Year	Unduplicated Count of Recipients of Services (All Ages)	Number of Services per 1000 Recipients			
		Hospital Discharges	Days of Hospital Care	Visits to Private Physicians (Office, Home, (In-Hospital)	Drugs
FY 1972	130,966	256.8	2,314	3,233	6,198
FY 1971	117,954	220.8	2,006	2,913	5,382
FY 1970	93,661	199.9	2,041	1,823	4,310

[1] Source: Form 2082, National Center for Social Statistics/DHEW. Numbers are for services paid for during the fiscal year, not necessarily for services rendered during that year because of time lag between date the service was received and payment date.

[2] Includes Short-Term and Long-Term Hospitals.

Table 5
AMBULATORY PHYSICIAN ENCOUNTERS

Home, Office, OPD* and ER** (Including Mental Health Visits)
Annualized Rates of utilization per enrollee by Age Group for the Study Population 12, 18 and 22 months respectively, before and after enrollment in the PGP. (With rates for the Medicaid Universe in FY '72 as a control)

	STUDY POPULATION										CONTROL POPULATION	
		BEFORE (B)			AFTER (A)			t VALUE OF DIFFERENCE (A-B)				
Age Group	Number of Persons	22 months	18 months	12 months	12 months	18 months	22 months	12 months	18 months	22 months	FY '72 Universe	No. Pop. At Risk+
1-4	123	2.37	2.71	2.67	3.26	2.78	2.66	1.52	0.19	0.86	3.01	23,716
5-9	157	1.72	1.78	1.63	1.81	1.69	1.61	0.79	-0.37	-0.43	1.89	27,987
10-14	160	2.18	2.36	2.44	1.81	1.94	1.83	-1.23	-0.96	-0.89	1.73	24,471
15-19	135	2.84	3.39	3.59	3.79	3.62	3.49	0.32	0.46	1.54	3.73	20,411
20-24	46	9.27	11.19	12.03	4.60	4.32	4.48	-4.80	-4.52	-3.34	8.06	11,110
25-35	65	10.15	12.24	11.99	6.43	5.88	5.72	-3.47	-3.76	-3.20	6.28	11,741
35-44	57	10.11	10.73	11.05	8.51	8.55	8.63	-1.17	-1.28	-0.93	7.19	6,802
45-54	31	8.13	10.13	10.34	10.54	10.06	9.64	0.11	-0.03	0.89	7.64	3,335
55-64	7	6.00	6.35	6.71	7.72	7.46	7.23	0.36	0.49	0.56	6.49	1,240
Subtotal 1-64	781	4.16	4.98	4.85	3.82	3.64	3.54	-3.42	-4.12	-2.58	3.91	130,813
Disabled	53	10.22	11.79	11.27	11.14	10.30	10.09	-0.04	-0.43	-0.04	6.33	11,455

* Outpatient Department
** Emergency Room
+ Annualized figures

Table 6

Trends in Ambulatory Physician Encounters - Rates of Utilization of Physician Visits by Medicaid Enrollees in PGP by Age Group* for Consecutive and Cumulative Time Periods After Enrollment

Age Group	Consecutive Time Periods			Cumulative Time Periods			
	First 6 months 7/1/71 - 12/31/71	Second 6 months 1/1/72 - 6/30/72	Third 6 months 7/1/72 - 12/31/72	First 6 months 7/1/71 - 12/31/71	First 12 months 7/1/71 - 6/30/72	First 18 months 7/1/71 - 12/31/72	First 22 months 7/1/71 - 4/30/73
1-4	3.45	2.88	2.17	3.45	3.13	2.80	2.68
5-9	1.93	1.64	1.51	1.93	1.77	1.68	1.63
10-14	2.06	1.62	2.14	2.06	1.81	1.93	1.82
15-19	4.34	3.33	3.12	4.34	3.78	3.55	3.39
20-24	4.31	5.04	4.04	4.31	4.71	4.48	4.65
25-34	5.81	6.75	5.55	5.81	6.33	6.06	5.92
35-44	10.39	7.78	8.27	10.39	8.95	8.70	8.86
45-54	13.01	9.68	9.43	13.01	11.19	10.58	10.11
55-64	14.06	3.00	5.03	14.06	8.45	7.41	7.08
Sub-total	4.22	3.51	3.31	4.22	3.83	3.65	3.55
Under 1	5.05	4.81	4.96	5.05	4.91	4.93	4.68
Over 65	13.55	10.13	9.61	13.55	11.75	11.03	10.97
Blind	12.80	0.67	6.67	12.80	6.18	6.35	6.10
Disabled	13.86	8.70	8.92	13.36	11.02	10.29	10.16
All Ages	5.55	4.33	4.15	5.55	4.88	4.62	4.50
Total Persons At Risk	997	993	1004	997	1012	1044	1054

*Age computed as of July 1, 1971

Table 7

HOSPITAL ADMISSIONS

Annualized Rates of Utilization per 1,000 enrollees by age group for the Study Group 12, 18, and 22 months respectively, before and after enrollment in the PGP (with rates for the Medicaid Universe in FY '72 as a control)

		STUDY GROUP						CONTROL GROUP	
		BEFORE			AFTER			Medicaid Universe FY 72	
Age Group	Number of Persons	22 months	18 months	12 months	12 months	18 months	22 months	Admission Rate	No. Pop. At Risk*
1-4	123	118	114	113	27	29	24	81	23,716
5-9	157	21	20	26	7	5	4	45	27,987
10-14	160	30	37	44	28	58	54	44	24,471
15-19	135	101	103	128	99	122	137	181	20,411
20-24	46	309	358	424	222	237	204	422	11,110
25-34	65	262	261	236	88	90	99	292	11,741
35-44	57	204	196	179	215	163	152	187	6,802
45-54	31	207	257	294	106	114	111	176	3,335
55-64	7	0	0	0	0	0	0	176	1,240
Subtotal 1-64	781	109	115	124	69	76	76	139	130,813
Disabled	53	149	168	189	83	54	76	247	11,455

* Annualized figures

Table 7a

HOSPITAL ADMISSIONS

Annualized Rates of Utilization per 1,000 enrollees by age group for the Study Group 12, 18, and 22 months respectively, before and after enrollment in the PGP, with Z values for the differences in the mean number of admissions.

STUDY GROUP

Age Group	Number of Persons	BEFORE			AFTER			Z value of the difference		
		22 months	18 months	12 months	12 months	18 months	22 months	12 months	18 months	22 months
1-4	123	118	114	113	27	29	24	-2.44	-2.78	-3.21
5-9	157	21	20	26	7	5	4	-1.28	-1.40	-1.28
10-14	160	30	37	44	28	58	54	-0.77	+1.01	+1.34
15-19	135	101	103	128	99	122	137	-0.69	+0.38	+0.86
20-24	46	309	358	424	222	237	204	-1.65	-1.40	-1.24
25-34	65	262	261	236	88	90	99	-1.74	-2.25	-2.55
35-44	57	204	196	179	215	163	152	-0.04	-0.88	-0.90
45-54	31	207	257	294	106	114	111	-1.27	-1.26	-0.98
55-64	7	0	0	0	0	0	0	0	0	0
Subtotal 1-64	781	109	115	124	69	76	76	-3.41	-2.91	-2.83
Disabled	53	149	168	189	83	54	76	-1.45	-2.06	-1.45

* Annualized figures

See page 29 for the calculation of the Z statistic

Table 8
HOSPITAL DAYS

Annualized Rates of Utilization per 1,000 enrollees by age group for the Study Group 12, 18, and 22 months respectively, before and after enrollment in the PGP (with rates for the Medicaid Universe in FY '72 as a control)

		STUDY GROUP Hospital Days/1,000 persons/year						CONTROL GROUP	
		BEFORE			AFTER			Medicaid Universe FY 1972	
Age Group	Number of Persons	22 months	18 months	12 months	12 months	18 months	22 months	Hospital Days	No. Pop. At Risk*
1-4	123	586	457	452	109	99	80	433	23,716
5-9	157	68	75	99	7	5	15	233	27,987
10-14	160	193	236	272	48	182	162	283	24,471
15-19	135	410	425	476	702	748	749	813	20,411
20-24	46	1,327	1,536	1,807	741	868	780	1,731	11,110
25-34	65	1,220	1,245	819	829	606	578	1,530	11,741
35-44	57	2,181	1,930	1,610	2,146	1,517	1,563	1,486	6,802
45-54	31	1,164	1,450	1,766	600	753	646	2,067	3,335
55-64	7	0	0	0	0	0	0	2,284	1,240
Subtotal 1-64	781	602	604	593	443	426	412	744	130,813
Disabled	53	2,242	2,408	2,593	1,289	831	856	3,594	11,455

* Annualized figures

Table 9

Average Length of Stay Per Admission (in Days) in Short-Term Acute Hospitals for 12, 18, and 22 Month Periods before and after enrollment, by age, for the Study Group (Compared with the D.C. Medicaid Universe - FY 1972 as a Control)

Group	Number of Persons	STUDY GROUP						CONTROL GROUP	
		BEFORE			AFTER			Medicaid Universe-FY 1972	
		22 months	18 months	12 months	12 months	18 months	22 months	Population at Risk	Average Length of Stay
1-4	123	4.95	4.0	4	4	3.4	3.4	23,716	5.34
5-9	157	3.2	3.75	3.75	1	1.0	2.0	27,987	5.15
10-14	160	6.38	6.38	6.14	1.75	3.23	3.07	24,471	6.42
15-19	135	4.04	4.11	3.71	7.08	6.23	5.5	20,411	4.50
20-24	46	4.29	4.29	4.26	3.33	4.0	3.81	11,110	4.10
25-34	65	4.65	4.77	3.47	8.33	6.0	5.67	11,741	5.23
35-44	57	10.68	9.87	9.0	10.6	9.55	10.07	6,802	7.93
45-54	31	5.64	5.64	6.0	7.25	7.5	6.71	3,335	11.76
55-64	7	0	0	0	0	0	0	1,240	12.99
Subtotal 1-64	781	5.53	5.27	4.79	6.44	5.65	5.44	130,813	5.36
Disabled	53	15.08	14.3	13.7	15.5	15.5	11.29	11,455	14.56

Table 10

Comparison of Hospital Admissions and Hospital Days by Service Category for the Study Group (After Enrollment) and the Medicaid Universe

	OBSTETRICAL			SURGICAL			MEDICAL			TOTAL		
	Number of Admissions	Number Of Days	Average Length Of Stay In Days	Number Of Admissions	Number Of Days	Average Length Of Stay In Days	Number Of Admissions	Number Of Days	Average Length Of Stay In Days	Number Of Admissions	Number Of Days	Average Length Of Stay In Days
Study Group (1-64) After	57	190	3.3	24	161	6.71	20	198	9.9	101	549	5.44
Study Group (1-64) Before	51	197	3.9	40	220	5.5	42	318	7.6	133	735	5.53
Medicaid Universe (1-64)*										18,158	197,332	5.36

* Breakdown of Admissions/Days by Service Category not available for the Medicaid Universe

Table 11

Rates of Admissions by Service Category per 1,000 Persons per Year for the Study Group, before and after enrollment in the Prepaid Group Practice

Rates of Admissions (Age 1-64)

	BEFORE			AFTER		
	22 months	18 months	12 months	12 months	18 months	22 months
Obstetrical	41.8	43.1	47.4	27.2	39.5	42.3
Surgical	32.8	34.3	31.6	20.1	18.4	17.8
Medical	34.4	37.2	44.8	21.5	17.5	14.9

Table 12

Rates of Hospital Days per 1,000 Persons per Year for the Study Group by Service Category Before and After Enrollment in the Prepaid Group Practice

Rates of Hospital Days (Ages 1 - 64)

	BEFORE			AFTER		
	22 months	18 months	12 months	12 months	18 months	22 months
Obstetrical	161	166	155	87	132	141
Surgical	180	181	144	156	114	120
Medical	261	256	294	199	179	147

Table 13

DRUG PRESCRIPTIONS

Annualized Rates of utilization per enrollee by Age Group for the Study Population 12, 18 and 22 months respectively, before and after enrollment in the PGP. (With rates for the Medicaid Universe in FY '72 as a control)

	STUDY POPULATION										CONTROL POPULATION	
		BEFORE (B)			AFTER (A)			t VALUE OF DIFFERENCE (A-B)				
Age Group	Number of Persons	22 months	18 months	12 months	12 months	18 months	22 months	12 months	18 months	22 months	FY '72 Universe	No. Pop. At Risk*
1-4	123	1.73	2.00	2.19	1.58	1.18	1.14	-1.97	-3.16	-2.47	2.18	23,716
5-9	157	1.08	1.02	1.10	0.82	0.73	0.78	-1.75	-2.02	-1.77	0.90	27,987
10-14	160	0.93	0.99	1.03	0.85	0.86	0.96	-1.03	-0.81	0.21	0.73	24,471
15-19	135	1.82	2.14	2.33	2.15	2.21	2.20	-0.40	0.17	1.11	2.02	20,411
20-24	46	5.84	7.25	7.79	3.72	3.71	4.12	-3.58	-3.40	-1.72	5.72	11,110
25-34	65	7.88	9.64	9.86	4.81	4.38	4.73	-5.41	-5.87	-4.90	5.95	11,741
35-44	57	7.58	8.77	9.03	6.20	5.88	6.11	-2.10	-2.41	-1.22	5.70	6,802
45-54	31	8.88	10.80	11.30	8.08	7.38	9.07	-1.54	-1.75	0.10	7.63	3,335
55-64	7	4.44	5.14	.86	6.60	5.48	6.96	0.59	0.12	0.97	8.98	1,240
Subtotal 1-64	781	2.94	3.44	3.61	2.41	2.24	2.42	-5.88	-6.33	-3.09	2.64	130,813
Disabled	53	10.08	12.25	12.67	12.58	11.24	12.50	-0.04	-0.48	1.10	6.97	11,455

* Annualized figures

Table 14

Trends in Rates of Utilization of Drug Prescription by Medicaid Enrollees, Per Person, Per Year, in PGP by Age Group* for Consecutive and Cumulative Time Periods After Enrollment

Age Group	Consecutive Time Periods			Cumulative Time Periods			
	First 6 months 7/1/71 - 12/31/71	Second 6 months 1/1/72 - 6/30/72	Third 6 months 7/1/72 - 12/31/72	First 6 months 7/1/71 - 12/31/71	First 12 months 7/1/71 - 6/30/72	First 18 months 7/1/71 - 12/31/72	First 22 months 7/1/71 - 4/30/73
1-4	1.50	1.42	0.85	1.50	1.42	1.23	1.13
5-9	0.88	0.80	0.92	0.88	0.84	0.87	0.79
10-14	0.96	0.86	1.09	0.96	0.88	0.95	0.94
15-19	2.52	1.99	2.47	2.52	2.16	2.27	2.15
20-24	3.74	3.70	4.31	3.74	3.72	3.92	4.14
25-34	4.65	4.95	4.58	4.65	4.80	4.72	4.88
35-44	7.30	5.35	7.08	7.30	6.20	6.52	6.53
45-54	10.52	7.55	10.15	10.52	8.65	9.17	9.36
55-64	10.29	3.00	3.48	10.29	6.59	5.65	5.80
Sub-total	2.67	2.23	2.52	2.67	2.40	2.44	2.42
Under 1	4.40	2.89	2.39	4.40	3.35	2.95	2.56
Over 65	12.41	11.57	12.99	12.41	11.80	12.25	12.11
Blind	10.40	1.33	6.67	10.40	5.46	5.88	6.67
Dis-abled	14.27	12.33	12.84	14.27	12.96	12.92	12.70
All Ages	4.18	3.49	3.30	4.18	3.74	3.76	3.68
Total Persons At Risk	997	993	1004	997	1012	1044	1054

* Age computed as of July 1, 1971

Table 15

Number, cumulative percentage, and rate per 1,000 persons of prescription drugs dispensed to Study Group, compared to the Medicaid Universe 1972 by therapeutic category

	STUDY GROUP				MEDICAID UNIVERSE			
Rank	Therapeutic Category*	Number Rx (22 mos.)	Cum. % f	No./1000 persons per year	Therapeutic Category	Number Rx (12 mos.)	Cum. % f	No./1000 persons per year
1	Diuretics	414	8.3	257	Diuretics	45798	8.3	287
2	Mild Analgesics	381	15.9	236	Mild Analgesics	40117	15.6	251
3	Antianxiety Agents	380	23.5	235	Antianxiety Agents	39724	22.8	249
4	Antihypertensive Agents	261	28.7	162	Penicillins	36970	29.5	232
5	Estrogens, Progestogens & Oral Contraceptives	256	33.8	159	Antihistamines	34314	35.7	215
6	Expectorants & Inhalants	247	38.8	153	Estrogens, Progestogens & Oral Contraceptives	31710	41.5	199
7	Penicillins	245	43.7	152	Antihypertensive Agents	23633	45.8	148
8	Antihistamines	213	48.0	132	Tetracyclines	22134	49.8	138
9	Tetracyclines	190	51.8	118	Adrenal Corticosterioids	20663	53.6	129
10	Antidiabetic agents	189	55.6	117	Bronchodilators	19581	57.2	122

Notes:

1. 30 categories account for ≥ 90% of PGP;
   31 categories account for ≥ 90% of controls.
2. 80 % of top 10 categories are the same for PGP and controls.

* Ninety therapeutic categories were established based on the AMA "Drug Evaluation".

Table 16

Number, cumulative percentage, and rate per 1,000 persons of prescription drugs dispensed to the Study Group, compared to the Medicaid Universe in 1972

	STUDY GROUP				MEDICAID UNIVERSE			
Rank	Drug Name	Number 22 mos.	Cum. % f	No./1000 persons per year	Drug Name	Number 12 mos.	Cum. % f	No./1000 persons per year
1	Tetracycline 500 mg	181	3.8	112	Valium 10 mg tab.	19,191	4.2	120
2	Librium 25 mg cap.	165	7.3	103	Darvon cpd 65	16,166	7.8	101
3	Lanoxin ped. elixir	164	10.8	102	Librium 25 mg tab.	15,099	11.1	95
4	Valium 10 mg tab.	155	14.1	96	Lasix 40 mg tab.	12,890	13.9	81
5	Benylin Expectorant	132	16.9	82	Tetracycline 500 mg	10,782	16.3	67
6	Empirin cpd 60 mg tab.	119	19.4	74	Actifed Tablet	10,413	18.6	65
7	Aldomet 250 mg tab.	104	21.6	64	Lanoxin ped. elixir	10,038	20.8	63
8	Zyloprim 100 mg tab.	96	23.6	60	Aldomet 250 mg tab.	8,725	22.7	55
9	Darvon cpd 65	93	25.6	58	Ovral 21.5 or 28.5	8,670	24.6	54
10	Hydrodiuril 25 mg	92	27.6	58	Polycillin 125 mg tab.	8,464	26.5	53

Notes:

1. 125 drugs account for $\geq$90% of PGP
   147 drugs account for $\geq$90% of controls
2. 60% of top 10 drugs are the same for PGP and controls

Table 17A

Of 50 most frequently prescribed drugs for the Study Group and the Control Group, all are approved by "AMA Drug Evaluation," except for the following Irrational Mixtures, i.e. there is no rationale for mixture or it contains at least one ingredient which has not been demonstrated to be efficacious for the purpose indicated on the label.

	STUDY GROUP (PGP)		CONTROL GROUP (non-PGP) Medicaid Universe
1.	Benylin Expectorant	1.	Darvon Cpd. 65
2.	Empirin Cpd.	2.	Actifed Tablet
3.	Darvon Cpd. 65	3.	Benylin Expectorant
4.	Fiorinal Tablet	4.	Empirin Cpd.
5.	Natalins Tx Tablet	5.	Tedral Susp.
6.	Donnatal Capsule	6.	Donnatal Capsule
7.	AVC Improved Suppository	7.	Phisohex Pt. 16 oz.
8.	Robitussin AC	8.	Fiorinal Tablet
9.	Phisohex Pt. 16 oz.	9.	Dimetapp Extentab
10.	Tedral Susp.	10.	AVC w/APP 4 oz. tube
11.	Phenergan VC Expectorant	11.	Ornade Spansule
12.	Butazolidin		
13.	Actifed Tablet		
	13/50 = 26% IR, (74% Approved)		11/50 = 22% IR, (78% Approved)

Table 17B

GENERIC DRUGS

(out of the top 50 most frequently prescribed)

	STUDY GROUP (PGP		CONTROL GROUP (non-PGP) Medicaid Universe
1.	Tetracycline-500 mg.	1.	Tetracycline-500 mg.
2.	Pencillin-6 Pot 2	2.	Phenobarbital-100 mg.
3.	Insulin-NPH U 100	3.	Insulin-NPH U 100
4.	Phenobarbital-700 mg.	4.	Ampicillin-Susp. 250 mg.
5.	Reserpine-0.25 mg.		
	5/50 = 10%		4/50 = 8%

Table 18

Percentage of leading ten therapeutic categories by new and refill prescription volume

Therapeutic Category	Percent of entire U.S. population (1971)	Percent of PGP Study Group	Percent of (D.C. Medicaid Universe) Control Group
1. Antibiotics	12.8	9.9	12.3
2. Hormones	11.4	7.7	10.4
3. Ataraxics	9.4	9.9	9.0
4. Analgesics	7.9	7.7	7.7
5. Cardiovascular Medicines	7.7	10.3	10.1
6. Cough and Cold Medicines	7.6	10.8	10.8
7. Sedatives - Hypnotics	4.7	1.5	2.8
8. Diuretics	4.3	8.3	8.3
9. Antispasmodics	3.2	3.6	3.1
10. Vitamins	3.0	1.2	1.7

Table 19

Medicaid Study Group enrolled in a prepaid group practice

PGP Yearly Cost and Revenue TOTALS	Fiscal Year 1972	Fiscal Year 1973	Fiscal Year 1974
Monthly Capitation Rate	$ 29.17	$ 28.66	$ 22.00
Revenues			
Capitation	309,639	338,835	247,541
From Medicare	8,247	9,038	13,881
Total	$317,886	$347,873	$261,432
Costs			
Hospital and Related Benefits	96,073	82,773	118,460
Other Medical Benefits	135,453	131,689	138,236
Opticians Benefits	3,729	3,385	3,417
Pharmacy Benefits	13,885	16,707	18,745
*Dental Benefits	51,894	53,037	62,888
*Outreach Benefits	N/A	1,951	3,132
*Transportation	N/A	1,889	1,356
Capital Reserve	3,011	4,042	3,838
*Prosthetics	N/A	N/A	925
Total Costs	$304,045	$295,473	$350,997
Gain/Loss	13,841	52,400	($89,565)
Cumulative Gain	13,841	66,241	(23,324)
Average Number Enrollees	865.8	990.5	941
A. Cost per Participant, Including Medicare Revenues (Superior PGP Benefit Package, including benefits marked with *)	$ 341.64	$ 289.20	$ 358.20
B. Cost per Participant, including Medicare Revenues (standard Medicaid Benefit Package, excluding benefits marked with *)	$ 281.71	$ 231.76	$ 285.67

Table 20

Medicaid annual per capita costs, District of Columbia

	Medicaid Fee-for-Service*				Medicaid Prepaid	
	Annualized Population at Risk	(A) Annual Cost (excludes Admin. Costs)	Total Cost (A) + 10% Admin. Costs	(B) Cost per Annualized Person At Risk Per Year	(C) Comparable PGP Costs For Similar Benefit Package	Savings
Fiscal Year 1972	135,237	$45,803,343	$50,383,677	$ 373	$282	24.4%
Fiscal Year 1973	159,700	$63,084,595	$69,393,054	$ 435	$232	47%
Fiscal Year 1974	166,963	$70,580,720	$77,638,792	$ 465	$286	38.5%
			Total for Three Years	$1,273	$800	37.2%

* For further details see

Table 21

Comparison of the Medicaid Study Group enrolled in a prepaid group practice with the D.C. Medicaid Universe, with regard to 2a) Program Category; 2b) Basis of Eligibility, and 2c) Adult/Child Ratio

2a) Program Category	D.C. Medicaid Universe		Study Group	
	Number	Percent	Number	Percent
Old Age Assistance (OAA)	12,837	6.5%	71	7.6%
Aid to the Blind (AB)	285	0.2%	3	0.3%
Aid to the Permanently Disabled (APTD)	12,212	6.2%	53	5.7%
Aid to Families with Dependent Children (AFDC), and "other"	170,938	86.9%	807	86.4%
Totals	196,272	99.8%	934	100%

2b) Basis of Eligibility	D.C. Medicaid Universe		Study Group	
	Number	Percent	Number	Percent
Categorically Indigent (CI)	115,964	59%	620	66.5%
Medically Indigent (MI)	80,308	41%	314	33.4%
Totals	196,272	100%	934	99.9%

2c) Age Groups	D.C. Medicaid Universe		Study Group	
	Number	Percent	Number	Percent
Children (1-19 yrs.)	121,745	60%	575	62%
Adults (20-64 yrs.)	38,760	22%	206	22%
Elderly 65	15,139	8%	71	8%
Blind & Disabled	13,644	7%	53	6%
Less than one year	7,001	3%	29	2%
Total	196,272	100%	934	100%

2d) Sex Distribution	D.C. Medicaid Universe		Study Group	
	Number	Percent	Number	Percent
Females	120,243	61%	573	61%
Males	76,029	39%	361	39%
Total	196,272	100%	934	100%

Table 22

D.C. Medicaid Fee-for-Service Universe FY 1972 (age group 1 to 64 years) -- variation in utilization rates of different services by the categorically indigent and the medically indigent.

Services	"Categorically Indigent" CI	"Medically Indigent" MI
Physician Visits per Person per Year	2.79	4.25
Visits to Other Providers per Person per Year	0.28	0.49
Drug Prescriptions per Person per Year	2.20	3.69
Short-Term Hospital Admissions per 1,000 Persons per Year	118.50	187.50
Inpatient Days per 1,000 Persons per Year (in short-term hospitals)	636.00	1,002.00
Admissions in Skilled Nursing Homes per 1,000 Persons per Year	0.14	16.64
Days in Skilled Nursing Homes per 1,000 Persons per Year	3.95	502.80
Long-Term Hospital Admissions per 1,000 Persons per Year	2.73	4.78
Days in Long-Term Hospitals per 1,000 Persons per Year	80.60	133.00
Intermediate Care Facility Admissions per 1,000 Persons per Year	0.04	0.96
Days in Intermediate Care Facility per 1,000 Persons per Year	1.30	29.20
Lab and X-Ray Services per Person per Year	0.12	0.20
Total per capita dollar cost for all services, excluding administrative costs	$171	$280

The $280 cost for MI is 63% higher than the $171 cost for CI.

Table 23

Cost Analysis,[6] Medicaid Group 600*, July 1, 1971 - March 31, 1972

	Services(A)		Cost Per Service	Total Cost
Internal Medicine[1]	1,282	Visits	$ 22.32	$ 28,614
Pediatrics[2]	865	Visits	19.40	16,781
OB/Gyn[3]	252	Visits	23.47	5,914
E.N.T.[4]	37	Visits	32.22	1,192
Ophthalmology[4]	101	Visits	17.39	1,756
Optometry	130	Visits	17.51	2,276
Allergy	8	Visits	31.92	255
Dermatology	49	Visits	20.59	1,009
Orthopedics[4]	67	Visits	19.92	1,335
Surgery[5]	57	Visits	27.78	1,583
Podiatry	32	Visits	9.15	293
Neurology-Neurosurgery[5]	13	Visits	67.18	873
Psychiatry	19	Visits	103.79	1,972
Psychology	1	Visits	80.15	80
Urgent Visits	513	Visits	10.70	5,489
Laboratory	12,992	Tests	1.64	21,307
Radiology (Film)	1,411	Films	6.82	9,623
Physical Therapy	39	Visits	7.60	296
				$100,648
Fee for Service Doctors	57	Visits		$ 2,009
Inpatient Hospital	66	Cases		59,800
Outpatient Hospital	83	Cases		3,219
Ambulance	19	Services		625
Extended Care	1	Case		478
				$166,779
Optician	98	Services		$ 2,860
Dental	2,014	Visits		$ 40,065
Pharmacy	2,591	Prescriptions		$ 9,811

(A) Services include physician services in health centers and hospitals.

[1] Includes E.K.G.'s, injections, special tests, i.e., audiograms, inhalation tests, proctoscopy, pap smears.

[2] Includes injection and other special tests.

[3] Includes delivery and surgery.

[4] Includes surgery.

[5] Includes in-hospital surgery.

[6] This cost analysis supplied by PGP.

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* Group 600 is the PGP code for the Study Group

Table 24

Breakdown of costs by major service category

Service Category	Study Group				Medicaid Universe
	FY 1972		FY 1973		FY 1972
Hospital	$ 88,436	35%	$ 91,948	39%	53.1%
Nursing Home	7,815	3.1%	7,579	3.2%	12.1%
Drugs	13,885	5.5%	16,707	7%	7%
All Other	142,015	56.3%	122,357	51.3%	27.8%
Total for Basic Benefits	$252,151	100%	238,591	100%	100%
Extra Benefits Including: Dental Outreach Transportation Prosthetics	$ 51,894		$ 56,882		
Total Cost	$304,045		$295,473		

Table 25

PGP yearly cost and revenue totals for the study group

	FY 72	FY 73	FY 74
Monthly Capitation Rate	$ 29.17	$ 28.66	$ 22.00
Revenues			
Capitation	309,639	338,835	247,541
From Medicare	8,247	9,038	13,881
Total	$317,886	$347,873	$261,432
Costs			
Hospital and Related Benefits	$ 96,073	$ 82,773	$118,460
Other Medical Benefits	135,453	131,689	138,236
Opticians Benefits	3,729	3,385	3,417
Pharmacy Benefits	13,885	16,707	18,745
*Dental Benefits	51,894	53,037	62,888
*Outreach Benefits	N/A	1,951	3,132
*Transportation	N/A	1,889	1,356
Capital Reserve	3,011	4,042	3,838
*Prosthetics	N/A	N/A	925
Total	$304,045	$295,473	$350,997
Gain/(Loss)	13,841	52,400	(89,565)
Cumulative Gain or (Loss)	$ 13,841	$ 66,241	$(23,324)
A = Average Number Enrollees	865.8	990.5	941
B = Total cost, including Medicare revenues	$295,798	$286,435	$337,116
B/A = Cost per participant for the superior PGP benefit package	$ 341.64	$ 289.20	$ 358.20
Cost per participant per month	$ 28.47	$ 24.10	$ 29.85
C = Cost of four extra benefits (asterisks)	$ 51,894	$ 56,887	$ 68,301
D = Cost excluding extra benefits (B-C)	$263,904	$229,548	$268,815
D/A = Cost per participant per year for basic benefit package	$ 281.71	$ 231.75	$ 285.67

Table 26

COMPARATIVE GROUPING BY FAMILY SIZE

Size of Family	Survey Study Group No. of Families	 No. of Individuals	Survey Control Group No. of Families	 No. of Individuals
1	93	93	93	93
2	46	92	45	90
3	45	135	47	141
4	24	96	24	96
5	21	105	21	105
6	20	120	19	114
7	10	70	11	77
8	4	32	4	32
9	4	36	3	27
10	0	0	0	0
11	2	22	2	22
12	0	0	0	0
13	1	13	1	13
Totals	270	814	270	810

X^2 for number of individuals = 2.68; p-value = .97

Table 27

COMPARATIVE GROUPING OF INDIVIDUALS BY AGE, SEX, AND DISABILITY (BROAD GROUPINGS)

	Survey Study Group			Survey Control Group		
Age	Male	Female	Totals	Male	Female	Totals
Under 15	206	191	397	185	206	391
15-44	68	209	277	75	203	278
45-64	4	35	39	5	36	41
65 & Over	15	42	57	24	36	60
Disabled	19	25	44	16	24	40
Total	312	502	814	305	505	810

Table 28

TRANSPORTATION TIME FROM HOME TO DOCTOR'S OFFICE

	Study Group (PGP)	Control Group (Non-PGP)
Less than 10 minutes	9%	13%
10 - 19 minutes	35%	28%
20 - 29 minutes	29%	36%
30 - 60 minutes	23%	17%
Over an hour	4%	5%
	100%	99%

$X^2 = 9.21$, p-value = .10

Table 29

TRANSPORTATION METHOD TO DOCTOR'S OFFICE

	Study Group (PGP)	Control Group (Non-PGP)
Walk	7%	20%
Drive in own car	5%	3%
Driven by friend	4%	5%
Taxi	15%	10%
Bus	54%	37%
Combination of Above	11%	22%
Other	2%	1%
Totals	98%	98%

$X^2 = 41.09$, p-value $< .001$

Table 30

NUMBER OF DAYS BEFORE ABLE TO SEE DOCTOR

	Study Group (PGP)	Control Group (Non-PGP)
Within 2 days	56%	44%
3 - 7 days	27%	24%
1 - 2 weeks	6%	12%
2 - 4 weeks	4%	4%
Over a month	2%	0%
Has regular appointments*	3%	14%
	98%	98%

$X^2 = 32.65$, p-value = .001

* A problem in the coding process accounts for some of the difference in this category.

Table 31

WAITING TIME IN DOCTOR'S OFFICE

	Study Group (PGP)	Control Group (Non-PGP)
Less than 10 minutes	56%	10%
10 - 19 minutes	29%	19%
20 - 30 minutes	9%	35%
Over 30 minutes	5%	35%
	99%	99%

$X^2 = 191.91$, p-value $\ll .001$

Table 32

PREVENTIVE HEALTH CARE FOR THOSE 6 YEARS AND OLDER

	Study Group (PGP)		Control Group (Non-PGP)		
	# Who Received Service	% Who Received Service	# Who Received Service	% Who Received Service	P-Value of X^2
Routine Physical Exam During Last 6 Months	419	63%	280	40%	.001
Blood Pressure Taken	415	62%	329	47%	.001
Urinalysis	403	60%	305	44%	.001
Chest X-Ray	375	56%	258	37%	.001
Tuberculin Skin Test	348	52%	228	33%	.001
Pap Smear	172	47%	142	39%	.30
Breast Exam	172	47%	158	43%	.70

Table 33

PREVENTIVE HEALTH CARE FOR THOSE UNDER 6 YEARS

	Study Group (PGP)		Control Group (Non-PGP)		
	# Who Received Service	% Who Received Service	# Who Received Service	% Who Received Service	P-Value of X^2
DPT Shot	111	76%	103	90%	.01
Polio Shot or Sugar Cube	109	74%	100	87%	.01
Measles Shot	107	73%	95	83%	.40
Physical Exam During Last 6 Months	87	59%	74	64%	.60
Shots During 1st 6 Months of Life	112	78%	102	89%	.02
Booster Shots	93	65%	84	73%	.10

Table 34

PREGNANCY RATE BY AGE

	Study Group (PGP)			Control Group (Non-PGP)		
	# of Women in Age Group	# of Pregnancies	Rate Per 1000 Persons/ 18 Months	# of Women in Age Group	# of Pregnancies	Rate Per 1000 Persons/ 18 Months
10 - 14	75	0	0	81	1	12
15 - 19	72	24	333	67	14	208
20 - 24	35	12	342	33	10	303
25 - 29	28	7	250	25	7	280
30 - 34	28	7	250	30	4	133
35 - 39	18	1	55	30	1	33
40 - 44	29	1	34	22	2	90
	285	52*	182	288	39*	135

* Four women in the Study Group reported two pregnancies each. One woman reported two pregnancies in the Control Group. These pregnancies were considered separate incidents.

$X^2 = 2.30$, p-value = .13

Table 35

OUTCOME OF PREGNANCY

	Study Group (PGP)		Control Group (Non-PGP)	
	Outcome of Pregnancy	% of Total Pregnancies	Outcome of Pregnancy	% of Total Pregnancies
Normal Birth	19	37%	19	49%
Birth With Complications	6	12%	4	10%
Stillbirth	2	4%	0	0%
Abortion or Miscarriage	16	31%	12	31%
Still Pregnant	9	17%	4	10%
Totals	52	101%	39	100%

$X^2 = 4.21$; p-value = .25

Table 36

TIMING OF FIRST DOCTOR VISIT FOR PRENATAL CARE

Trimester of Pregnancy	Study Group (PGP)		Control Group (Non-PGP)	
	# of Pregnancies	% of Pregnancies	# of Pregnancies	% of Pregnancies
First	31	60%	29	74%
Second	17	33%	6	15%
Third	2	4%	2	5%
No Medical Care	2	4%	2	5%
Totals	52	101%	39	99%

$X^2 = 3.44$, p-value = .40

Table 37

PERCENT WHO SAW DENTIST DURING LAST SIX MONTHS

	Study Group (PGP)			Control Group		
	No. of Persons Who Saw Dentist	No. of Persons In Age Group	% Who Saw Dentist	No. of Persons Who Saw Dentist	No. of Persons In Age Group	% Who Saw Dentist
Under 15	228	397	57.4%	100	391	25.5%
15 - 44	189	277	68.2%	66	278	23.7%
45 - 64	20	39	51.2%	9	41	21.9%
65 & Over	23	57	40.3%	5	60	8.3%
Disabled	24	44	54.5%	12	40	30.0%
Total	484	814	59.4%	192	810	23.7%

$X^2 = 3.41$; p-value = .40

Table 38

NUMBER OF DENTAL VISITS PER PERSON DURING SIX MONTH PERIOD

	Study Group (PGP)			Control Group (Non-PGP)			National Average**
	# of Dental Visits*	Total # at Risk	# of Dental Visits Per Person	# of Dental Visits*	Total # At Risk	# of Dental Visits Per Person	# of Dental Visits Per Person
Under 15	536	397	1.35	183	391	.47	.7(1)
15 - 44	512	277	1.85	130	278	.47	.8(2)
45 - 64	55	39	1.41	33	41	.80	.8
65 & Over	46	57	.80	11	60	.18	.5
Disabled	46	44	1.05	22	40	.55	N/A(3)
All Ages	1,195	814	1.46	379	810	.47	.75

For the comparison "Study Group vs. Control Group" only, X^2=15.29, p-Value of .01.

* In developing this table, six dental visits were estimated for those who said they had seen a dentist more than five times.

**Derived from data in Current Estimates from the Health Interview Survey, 1969. Public Health Services Publication 1000-Series 10, No. 63, p.21.

(1) For the age category "Under 17".

(2) For the age category "17-44".

(3) Data not available.

Table 39

TYPE OF DENTAL SERVICES RECEIVED

	Study Group (PGP)		Control Group (Non-PGP)	
	# of Services	% of Total Services	# of Services	% of Total Services
Screening	116	12%	14	6%
Extraction	117	12%	43	18%
Filling	262	26%	48	20%
Cleaning & Check-up	346	35%	114	48%
X-Ray	136	14%	12	5%
Gum Surgery	5	11%	6	3%
Other	14	1%	2	1%
Totals	996	101%	239	101%

$\chi^2 = 45.96$, p-value = .001

Table 40

SATISFACTION WITH DENTAL CARE

	Study Group (PGP)		Control Group (Non-PGP)	
	No. of Persons	% of Persons	No. of Persons	% of Persons
Very Satisfied	275	61%	40	21%
Satisfied	171	38%	136	71%
Dissatisfied	5	1%	13	7%
Very Dissatisfied	1	0%	3	1%
Totals	452*	100%	192	100%

* Only 452 of the 484 persons who saw a dentist were asked this question. The other 32 persons saw non-PGP dentists.

$X^2 = 93.47$, p-value .001

Table 41

OUT-OF-PLAN (OP) SERVICES, BY DOLLAR AMOUNTS

	Study Group (PGP)		Control Group (Non-PGP)	
	No. of OP Services	% of Total OP Services	No. of OP Services	% of Total OP Services
Less than $5	19	30%	8	10%
$5 to $9	18	28%	16	20%
$10 to $19	8	13%	24	29%
$20 to $49	10	16%	23	28%
$50 to $99	4	6%	9	11%
$100 to $499	5	8%	2	2%
$500 and Over	0	0%	0	0%
Totals	64	101%	82	100%
Median size of payment: $8.60			Median size of payment: $17.00	

$X^2 = 14.98$, p-value = .01

Table 42

OUT-OF-PLAN (OP) SERVICES, BY TYPE OF SERVICE

	Study Group (PGP)					Control Group				
	No. of OP Services	% of Total OP Services	No. of Within-Plan Services	Total # of Services Used	Rate of OP Services Per 1000 Services	No. of OP Services	% of Total OP Services	No. of Within-Plan Services	Total # of Services Used	Rate of OP Services Per 1000 Services
Doctor Visits	11	17%	4,442	4,453	2.4	21	26%	**		
Hospital or Nursing Home Admissions	7	11%	86	93	75.2	10	12%	**		
Dental Visits	7	11%	3,660	3,667	1.9	16	20%	**		
Prescriptions	37	58%	3,328	3,365	10.9	32	39%	**		
Other	2	3%	*			3	4%	**		
	64	100%	11,516	11,578	5.5	82	101%			

* No comparable within-plan data available
** No data available

$X^2 = 5.62$, p-value = .20

Table 43

THINGS LIKED ABOUT PGP VS. THINGS LIKED ABOUT MEDICAID

Reasons	Study Group (PGP) % of Respondents Mentioning This Reason	Control Group (Non-PGP) % of Respondents Mentioning This Reason
Convenience	66%	13%
Personalized Service	31%	1%
Quality of Care	16%	6%
Liked Nothing in Particular	12%	25%
Liked Everything	5%	8%
Dental Service	18%	N/A
Free Service	0%	56%
Average Number of Responses Per Respondent	1.61	1.20

Table 44

THINGS DISLIKED ABOUT PGP VS. THINGS DISLIKED ABOUT MEDICAID

Reasons	Study Group (PGP) % of Respondents Mentioning This Reason	Control Group (Non-PGP) % of Respondents Mentioning This Reason
Inconvenience	15%	14%
Impersonal Service	12%	4%
Quality of Care	5%	0%
Disliked Nothing	62%	67%
Limited Service	3%	8%
Red Tape	2%	6%
Average Number of Responses Per Respondent	1.13	1.08

Table 45

SATISFACTION WITH OVERALL CARE

	Study Group (PGP)		Control Group (Non-PGP)	
	No. of Families	% of Total Families	No. of Families	% of Total Families
Very Satisfied	105	39%	54	20%
Satisfied	135	50%	204	76%
Dissatisfied	23	9%	7	3%
Very Dissatisfied	4	1%	1	0%
Don't Know or no Data	3	1%	4	1%
	270	100%	270	100%

$X^2 = 9.92$, p-value = .01

Table 46

COMPARISON OF PGP SERVICES WITH MEDICAID PROGRAM SERVICES

	Total # of Respondents in Age Group	Better No. and %		About the Same No. and %		Poorer No. and %	
Under 25	36	15	42%	18	50%	2	6%
25 - 44	103	67	65%	26	25%	10	10%
45 - 64	38	22	58%	13	34%	2	5%
65 and Over	53	23	43%	27	51%	1	2%
Disabled	40	19	48%	17	43%	3	8%
Totals	270	146	54%	101	37%*	18	7%*

* Percentages do not add up to 100% because some responded "Don't know" and others failed to respond.

$X^2 = 15.71$, p-value = .05

Table 47

Terminations of Study Group Members from the Prepaid Group Practice

Over a 32-Month Period, July 1971 through February 1974

	Reason for Termination			Number of Families*	Number of Individuals
	Involuntary	Voluntary "Dropout"	Not Known		
1	Died			23	27
2	Moved out of the District of Columbia			20	49
3	Termination Suggested by the PGP			2	2
4	Incarcerated			1	1
5	Drafted into the Armed Services			2	2
6	Admitted to Foster Home			6	9
7	Found a job with health benefits			1	5
8		Dissatisfaction with PGP Plan		22	62
9			Unavailable for interview	3	18
	TOTAL			77	175

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* Some families are counted more than once because individual members in the same family somtimes terminated for different reasons. Each individual however is counted only once.

·Table 48

"Dropouts" and "Stays" at the PGP by Sex, Age, and Disability Status

	Stayed in PGP			Dropped out of PGP		
Age/Sex	Female	Male	Both Sexes	Female	Male	Both Sexes
0-14	189	210	399	14	19	33
15-44	221	70	291	13	4	17
45-64	33	3	36	3	0	3
65+	35	11	46	7	0	7
Disabled	29	18	47	0	2	2
TOTAL	507	312	819	37	25	62

PGP = Prepaid Group Practice

Table 49

Dropouts from the PGP by Basis of Eligibility, Age, Head of Household, and By Family Size

Family Size	Basis of Eligibility		Age of Head of Household					
	Categorically Indigent CI	Medically Indigent MI	25	25-34	35-44	45-54	55+	TOTAL
1	3	7	1	0	0	1	8	10
2	6	2	2	4	0	0	2	8
3	6	0	3	3	0	0	0	6
4	8	0	4	0	4	0	0	8
5+	30	0	0	0	13	17	0	30
TOTAL	53	9	10	7	17	18	10	62

Table 50

"Stays," in the PGP by Basis of Eligibility, Age, Head of Household and By Family Size

Family Size	Basis of Eligibility		Age of Head of Household					
	Categorically Indigent CI	Medically Indigent MI	25	25-34	35-44	45-54	55+	TOTAL
1	56	30	4	0	6	7	69	86
2	51	78	33	28	18	21	29	129
3	77	45	42	31	28	16	5	122
4	63	38	10	64	12	8	7	101
5+	288	93	5	130	169	71	6	381
TOTAL	535	284	94	253	233	123	116	819

Table 51

Dropouts*, Length of Stay in PGP Plan Before Termination, by Family Size

Length of Stay	Family Size					
Number of Months	1	2	3	4	5+	TOTALS
0-8	5(5)	0(0)	3(1)	4(1)	6(1)	18(8)
8-16	2(2)	4(2)	0(0)	0(0)	7(1)	13(5)
16-24	3(3)	4(2)	0(0)	0(0)	8(1)	15(6)
24-32	0(0)	0(0)	3(1)	4(1)	9(1)	16(3)
TOTALS	10(10)	8(4)	6(2)	8(2)	30(4)	62(22)

*Entries are numbers of persons, with represented number of families in parentheses.

Table 52

MONTHLY TOTALS OF MEDICAID ELIGIBLES

DISTRICT OF COLUMBIA

MEDICAID CARD-HOLDERS*

FY 1970		FY 1971		FY 1972		FY 1973		FY 1974		FY 1975	
12/31/69	97,160	07/02/70	108,943	06/03/71	131,139	07/01/72	152,157	06/30/73	159,441	06/30/74	176,373
02/01/70	91,682	08/06/70	110,892	08/01/71	127,401	08/01/72	155,384	07/31/73	156,846	07/31/74	177,445
02/28/70	98,105	09/06/70	111,941	09/01/71	128,290	09/01/72	158,511	08/31/73	155,853	08/31/74	179,844
04/04/70	99,573	10/03/70	115,396	10/01/71	128,152	10/01/72	159,485	09/30/73	157,942	09/30/74	177,287
05/09/70	102,871	10/20/70	120,670	11/01/71	128,295	11/01/72	160,317	10/31/73	160,565	10/31/74	176,177
06/08/70	107,837	11/14/70	123,841	12/01/71	131,858	12/01/72	161,437	11/30/73	166,493	11/	
		01/05/71	139,199	01/01/72	132,529	01/01/73	160,520	12/31/73	169,274	12/31/74	175,272
		01/31/71	112,358	02/01/72	135,676	01/31/73	161,110	01/31/74	173,010		
		02/28/71	115,355	03/01/72	141,215	02/28/73	160,634	02/28/74	174,683		
		03/31/71	117,054	04/01/72	141,675	03/31/73	162,718	03/31/74	175,875		
		04/30/71	119,021	05/01/72	146,738	04/30/73	162,585	04/30/74	176,728		
		05/31/71	131,769	06/01/72	149,872	05/31/73	161,546	05/31/74	176,848		
	597,228		1,426,439*		1,622,840*		1,916,404*		2,003,558*		
Average**	99,538		118,870		135,237		159,700		166,963		

Source: D.C. Government/DHR/Report D-0115-R.
* Total Patient Months
** Annualized Population at Risk

(See Figure 5 for a plot of these numbers)

Table 53

Medicaid per Capita Costs per Year, District of Columbia

	(A)	(E)	(E/A)	(B)	(E/B)		
CY or FY	Unduplicated Count of Recipients	Total Payments to Providers	Cost per Recipient	Annualized Population at Risk*	Cost Per Annualized Person at Risk	Cost Per Annualized Person + 10% Admin.Costs	Increase Over Previous Year
CY 1969	66,251	$ 13,777,211	$ 207.95	N/A	N/A	N/A	N/A
FY 1970	93,661	$ 22,308,084	$ 238.17	N/A	N/A	N/A	N/A
CY 1970	112,275	$ 30,507,516	$ 271.72	107,409	$ 284.03	$ 312.	N/A
FY 1971	117,954	$ 36,012,034	$ 305.31	118,870	$ 302.95	$ 333.	N/A
CY 1971	125,615	$ 41,052,893	$ 326.82	125,824	$ 326.27		
FY 1972	130,966	$ 45,803,343	$ 349.73	135,237	$ 338.69	$ 373.	12.0%
FY 1973	140,123	$ 63,084,595	$ 450.21	159,700	$ 395.02	$ 435.	16.6%
FY 1974	141,482	$ 70,580,720	$ 498.87	166,963	$ 422.73	$ 465.	6.9%
FY 1975	149,817	$ 93,100,836	$ 621.43				

A and E: Data from Form 2082/NCSS/HEW

B: Data from Form D-0115-R/DCGov't

N/A: Not available

*See page for details

(The above is based on claims paid during the period indicated. Services may have been rendered during a previous time period.)

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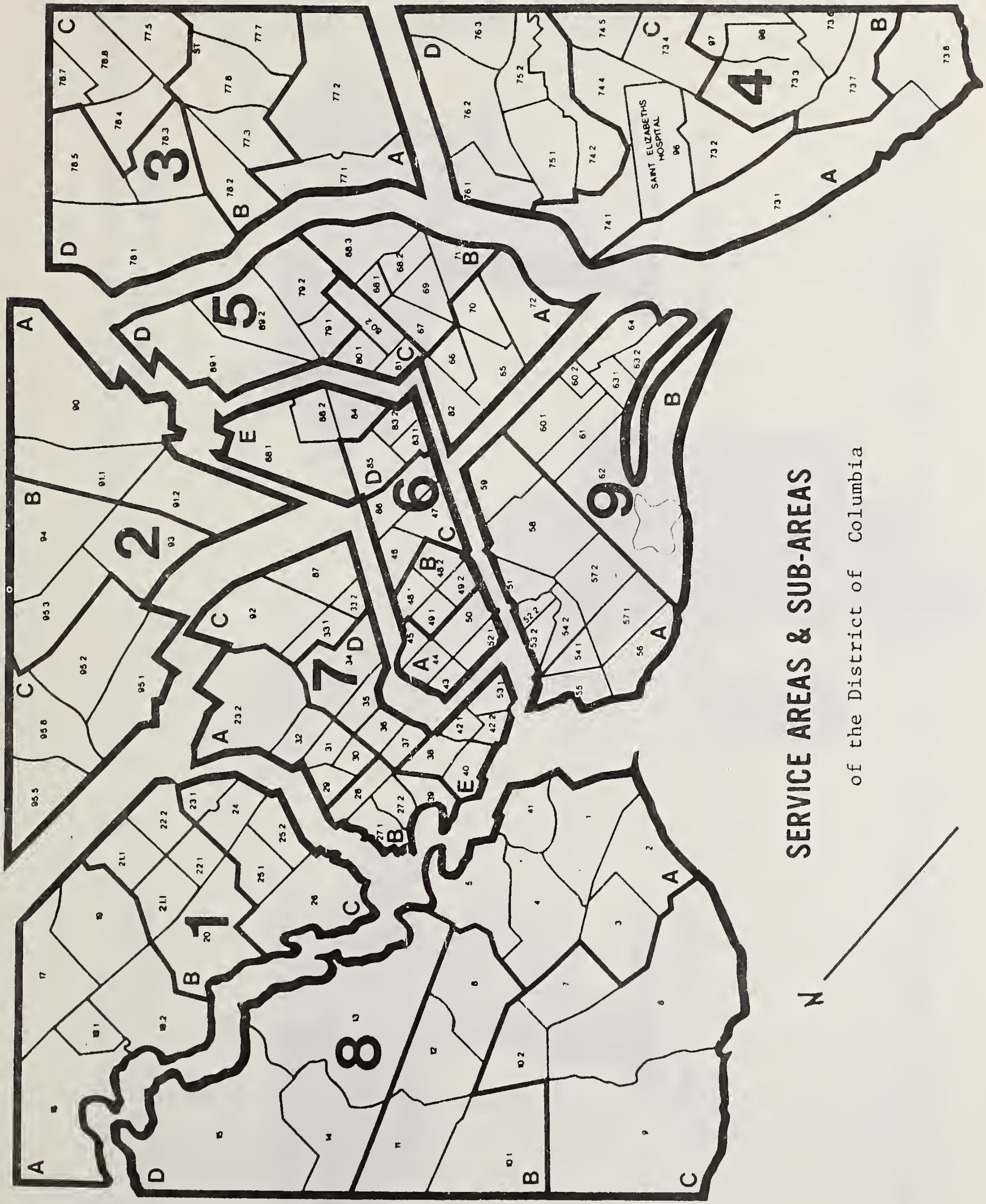
FIGURE 1

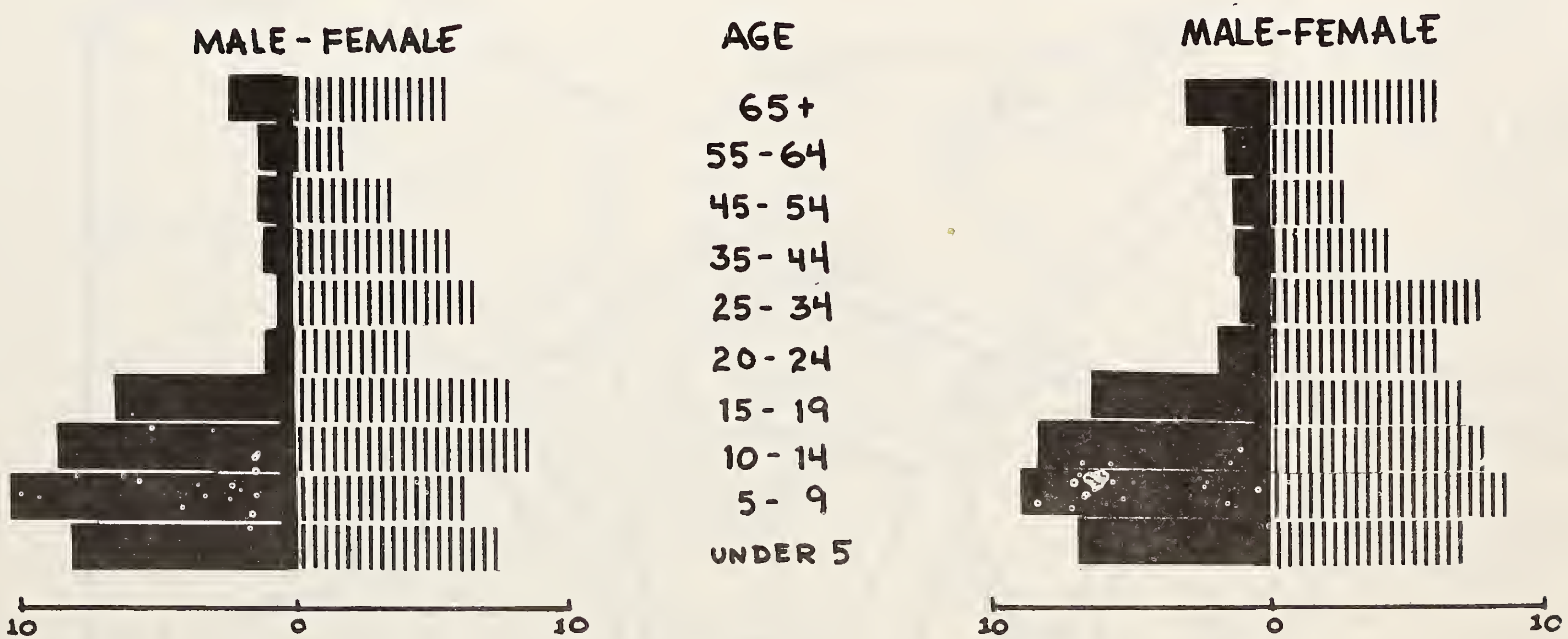


SERVICE AREAS & SUB-AREAS

of the District of Columbia

FIGURE 2

AGE-SEX PYRAMIDS FOR THE STUDY GROUP AND CONTROL GROUP

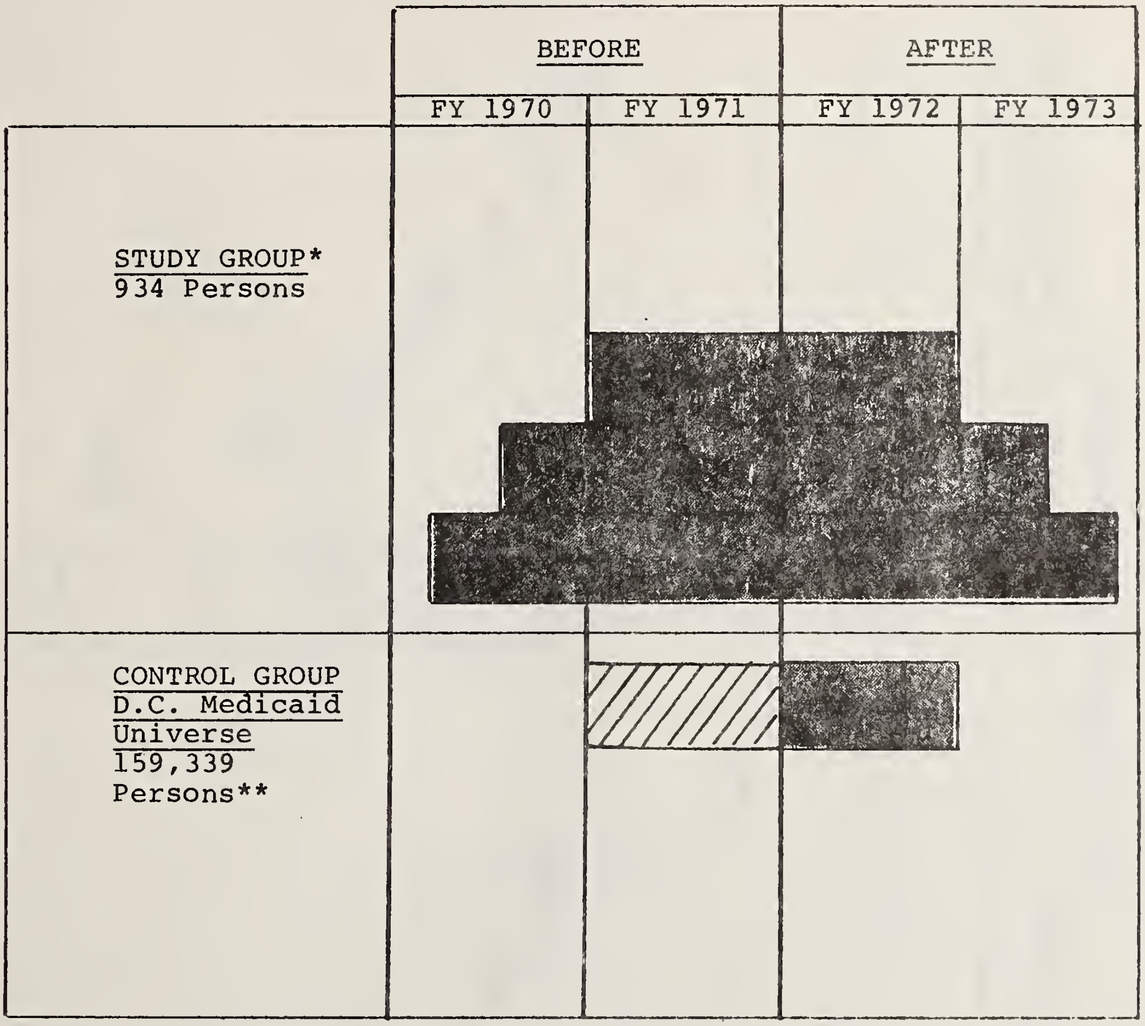


1972 STUDY GROUP
(934 Individuals)

CONTROL GROUP
1972 D.C. Medicaid Universe (196,275)

FIGURE 3

THE RESEARCH DESIGN

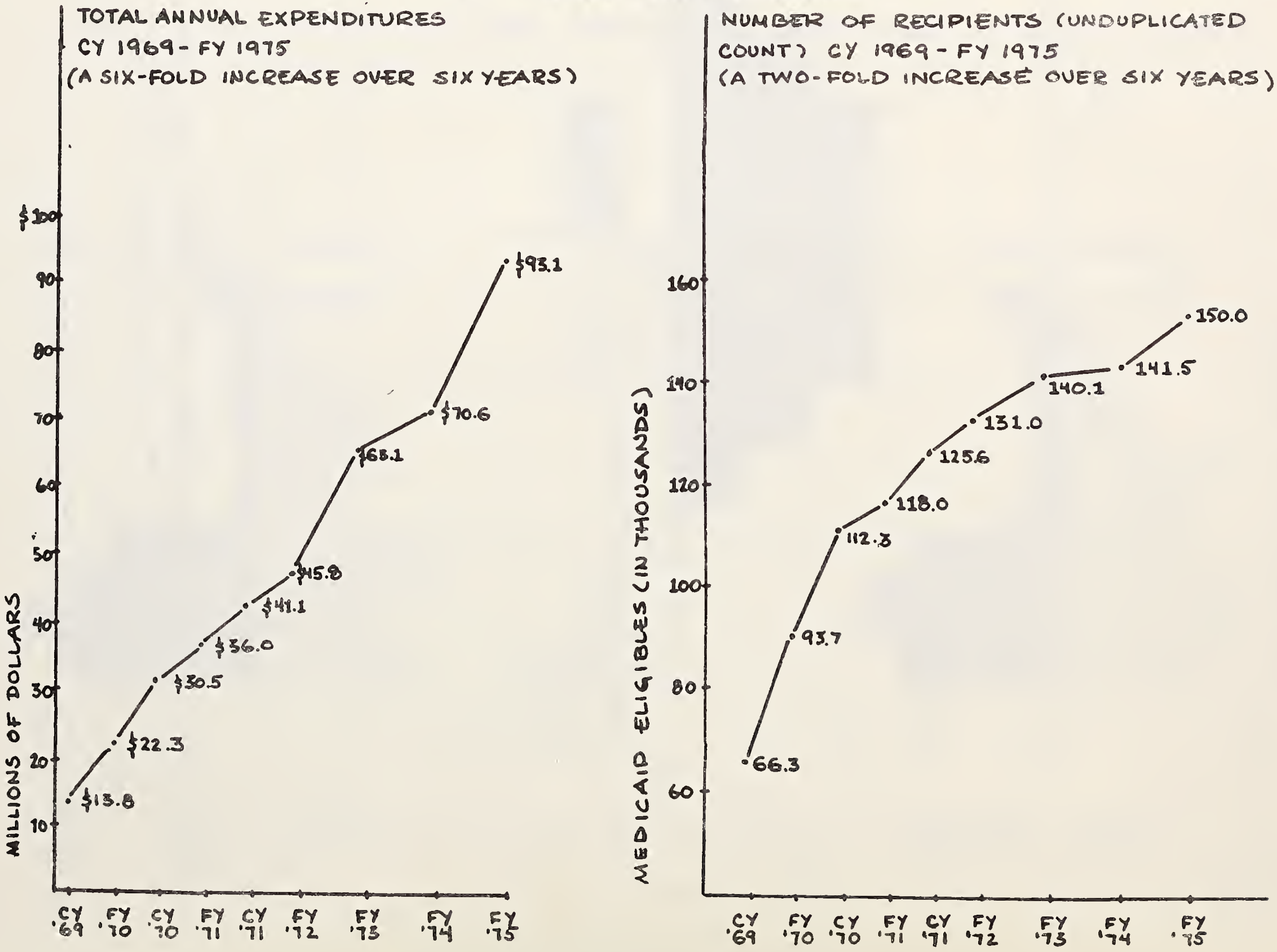


* CONDITIONS: All study group enrollees must have at least one month eligibility in FY 1971 and at least one month eligibility in FY 1972

** Annualized number of persons or person-years.

FIGURE 4

D.C. MEDICAID PROGRAM



TOTAL ANNUAL EXPENDITURES
CY 1969 - FY 1975
(A SIX-FOLD INCREASE OVER SIX YEARS)

NUMBER OF RECIPIENTS (UNDUPLICATED COUNT) CY 1969 - FY 1975
(A TWO-FOLD INCREASE OVER SIX YEARS)

FIGURE 5

MONTHLY TOTALS OF MEDICAID ELIGIBLES

▶ DISTRICT OF COLUMBIA
FOR CY 1970 - FY 1975

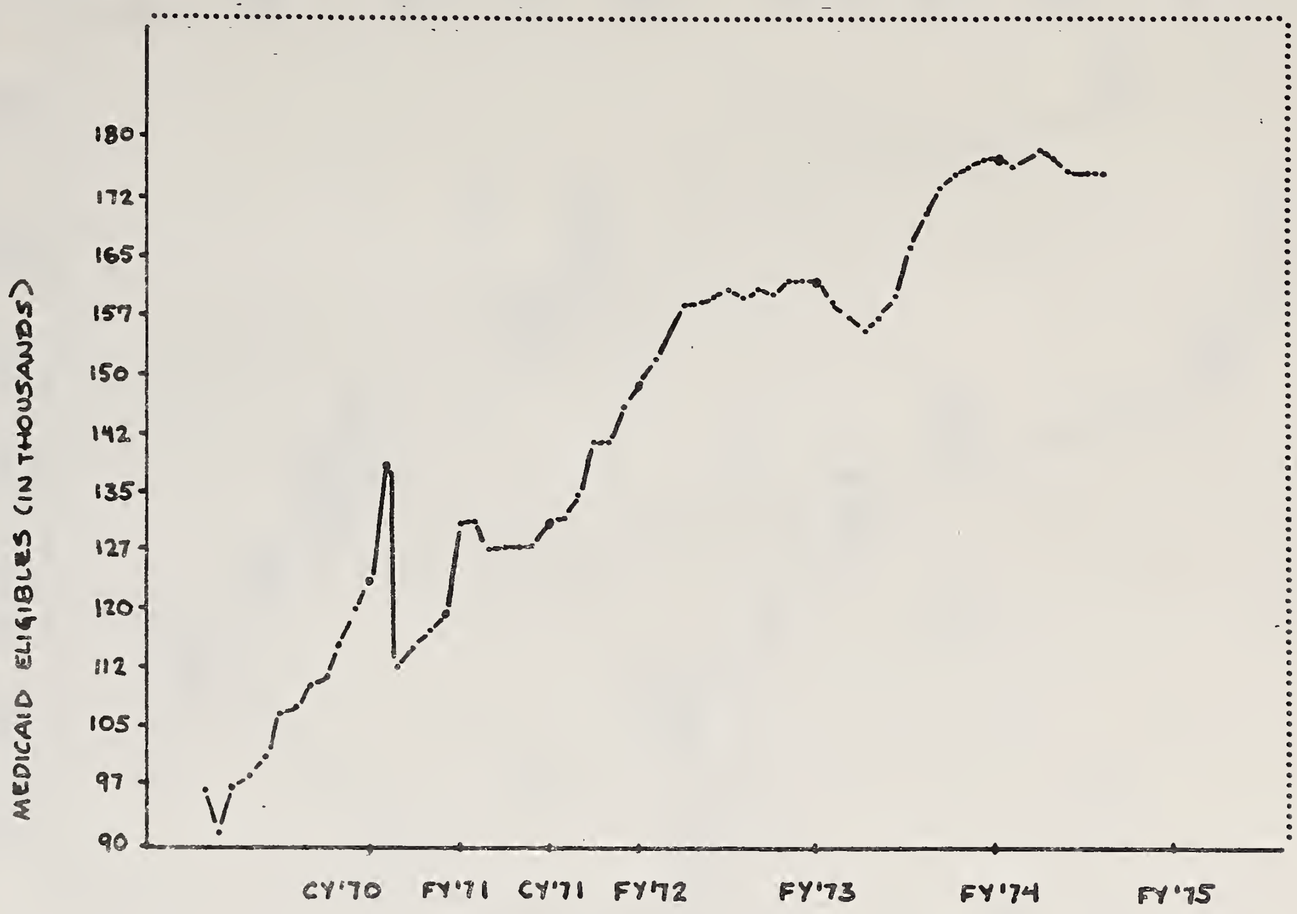
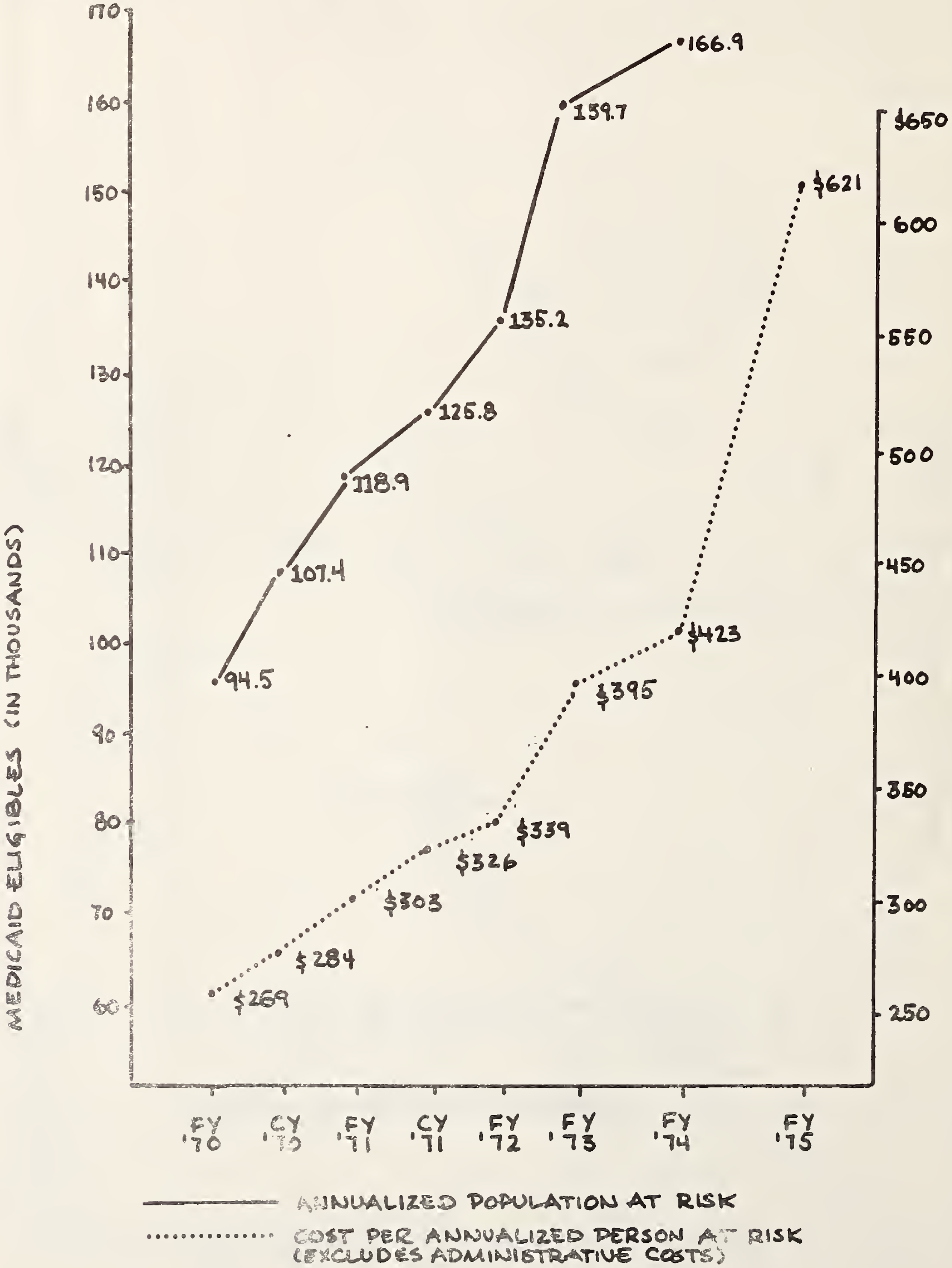


FIGURE 6

ANNUALIZED POPULATION AT RISK AND COST* PER ANNUALIZED PERSON AT RISK FOR THE D.C. MEDICAID PROGRAM



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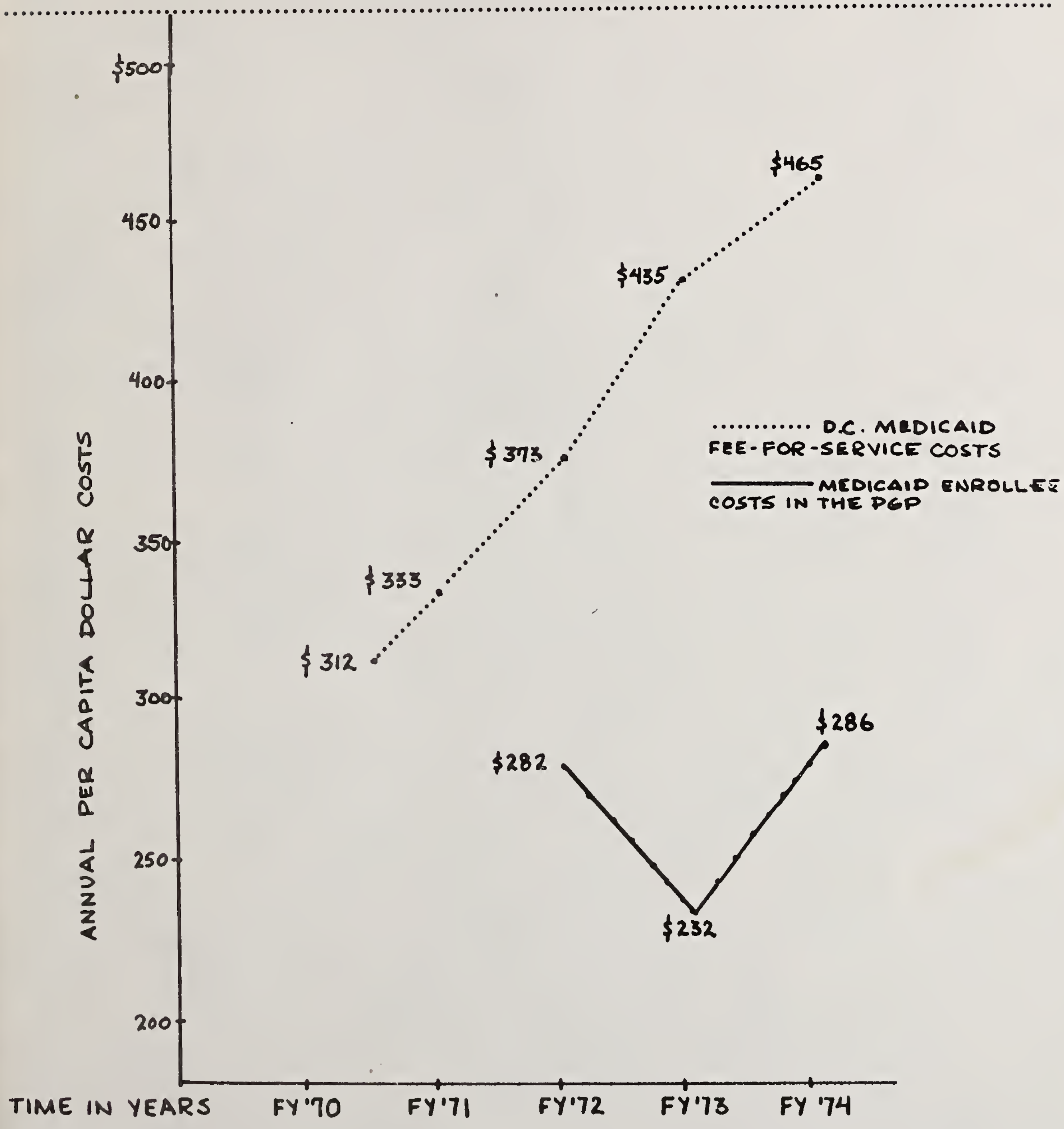
*Based on claims paid during that year. Service date may be in another year

FIGURE 7

COMPARISON OF ANNUAL PER CAPITA COSTS OF THE D.C. MEDICAID FEE-FOR-SERVICE SYSTEM WITH THE COSTS OF MEDICAID ENROLLEES IN A PREPAID HEALTH PLAN (PGP)



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